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Exploring Financing Options for Higher Education in Jamaica

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ABSTRACT

The government of Jamaica (GOJ) funds seventeen tertiary level institutions (TLIs) inclusive of two Higher Education Institutions (HEIs). An initial review of the funding to these institutions suggested that the allocations were arbitrary as there were no correlation with their enrolment and missions. This led to the identification of the financing policies for HE which gave rise to the main question "**What are the consequences (intended and unintended) of the different models adopted by Jamaica for the financing of higher education?"** Also in tracing the evolution of HE in Jamaica four sub-questions arouse which were:

1. **What are the consequences of an unchanged financing model for a system that has shifted from a single provider to diverse providers?**
2. **What are the consequences of financing both a national higher education system and a regional one?**
3. **What were the philosophical underpinnings to the allocation of resources to HE in Jamaica?**
4. **What models are available to the Jamaican government for allocating resources to HE?**

The fourth sub-question was used as the basis for the literature search and review. The issues of equity and efficiency were identified from the review as the main reasons for the state involvement in financing HE. Frameworks for analysing the consequences of the various Jamaican policies were also built from the study of the literature. The other questions were used as the background to the discussion and recommendations.

Ground theory was the strategy of inquiry. The research drew on the views of Punch (1998) that the research questions and problems should direct the research instead of ones knowledge claim. Using interviews and documents and following the multiple processes of coding analysing and recoding as well as the use of the inductive logic, the research eventually identified some theoretical underpinnings which informed the recommendations for changes to the financing and resource allocation methodology for the Jamaican HE system.

LIST OF ABBREVIATIONS

ABC	Activity Based Costing
Bd$	Barbados Dollar
CA	College of Agriculture
CASE	College of Agriculture Science and Education
CAST	College of Arts, Science and Technology
CGC	Campus Grants Committee
CTAC	Campus Technical Advisory Committee
CXC	Caribbean Education Council
DFS	Deputy Financial Secretary
F & GP	Finance and General Purposes
FS	Financial Secretary
FTE	Full Time Equivalent
GCE	General Certificate of Education
GOJ	Government of Jamaica
HE	Higher Education
HEFCE	Higher Education Funding Council of England
HEI	Higher Education Institution
IDT	Industrial Disputes Tribunal
IRR	Internal Rate of Return
ISRR	Internal Social Rate of Return
IMF	International Monetary Fund
IUC	Inter-University Council
Ja$	Jamaican Dollar
JSA	Jamaica School of Agriculture
JTA	Jamaica Teachers' Association
LDC	Lesser Developed Countries
MFCA	Multiple Factors Cost Allocation

MOE	Ministry of Education
MOEYC	Ministry of Education, Youth and Culture
MOF	Ministry of Finance
MOFP	Ministry of Finance and Planning
MOH	Ministry of Health
MP	Member of Parliament
MPC	Ministerial Policy Committee
MPS	Ministry of the Public Service
NCB	National Commercial Bank
NCC	Non Campus Country
NCU	Northern Caribbean University
NPV	Net Present Value
NVQ	National Vocational Qualification
p.a.	per annum
p.p.a.	per person per annum
PCC	per Capita Cost
PIOJ	Planning Institution of Jamaica
PS	Permanent Secretary
QAM	Quality Assurance Mechanism
RAM	Resource Allocation Model
SLB	Students' Loan Bureau
SLC	Survey of Living Conditions
TAC	Technical Advisory Committee
TLI	Tertiary Level Institutions
TOR	Terms of Reference
TT$	Trinidad and Tobago Dollar
UCJ	University Council of Jamaica
UCWI	University College of the West Indies
UGC	University Grants Committee

UHWI	University Hospital of the West Indies
UTech	University of Technology, Jamaica
UWI	University of the West Indies
VC	Vice Chancellor
WIGUT	West Indies Group of University Teachers

CHAPTER 1
THE RESEARCH PROBLEM

THE CONTEXT

The government of Jamaica (GOJ) funds seventeen tertiary level institutions (TLIs). These consist of two universities, the University of the West Indies (UWI) and the University of Technology, Jamaica (UTech); the Edna Manley College of the Visual and Performing Arts; the College of Agriculture, Science and Education, (CASE); seven multi-discipline colleges; and six single discipline teacher-training colleges. The government's stated financing policy is that the UWI is funded on a per student basis in relation to a percentage of the economic cost and all the other institutions are funded on the basis of recovery for staff cost. This policy raises the question of a rationale for the different bases of funding the institutions. The Jamaican government's funding of TLIs since 1995 is shown in Table 1.1.

Table 1.1: The Jamaican Government Funding of TLIs per Student

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/00*	*2000/01*	*2001/02*
	Ja$						
UWI	178.28	229.90	303.64	242.11	166.12	188.16	162.87
UTech	24.52	42.08	79.92	161.78	71.89	103.16	124.02
Edna Manley College	52.67	66.10	142.39	269.91	316.19	247.31	581.44
CASE	101.22	160.61	394.58	227.38	231.21	180.58	280.16
Multi-Discipline Colleges	21.58	34.30	47.39	43.13	53.64	52.64	58.92
Teachers' Colleges	70.66	100.47	115.88	107.21	116.05	117.75	150.43

The table shows that there is no consistency in the funding. The University of Technology, Jamaica, which is one of the two government-funded universities, is given the second lowest amount per student. The community colleges have been the only ones getting less. The average per student, per year is $87; the community colleges receive $45; the teacher training colleges, $111; the UWI, $210; the CASE, $225 and the Edna Manley College $235.

A second observation is that the total sums granted do not relate to enrolment. Table 1.2 shows the percentage contribution to HEIs in Jamaica.

Table 1.2 Percentage Government's Contribution to each TLIs in Jamaica

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/00*	*2000/01*	*2001/02*
UWI	68%	64%	65%	53%	53%	49%	44%
UTech	8%	11%	13%	24%	17%	20%	23%
Edna Manley College	2%	2%	2%	2%	3%	3%	3%
CASE	3%	3%	3%	4%	5%	4%	5%
Multi-Disciplinary Colleges	9%	9%	9%	8%	12%	12%	13%
Teachers' Colleges	10%	10%	9%	9%	12%	12%	13%

Table 1.3 however shows the population distribution of students in those institutions.

Table 1.3 Student Distributions in the Tertiary Level System in Jamaica

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/00*	*2000/01*	*2001/02*
UWI	29%	29%	33%	33%	36%	31%	35%
UTech	25%	26%	24%	23%	26%	24%	23%
Edna Manley College	3%	3%	2%	1%	1%	1%	1%
CASE	2%	2%	1%	3%	2%	3%	2%
Multi-Disciplinary Colleges	31%	29%	28%	28%	24%	28%	29%
Teachers' Colleges	11%	11%	12%	12%	11%	12%	11%

Comparison of the two tables reveals that there is no correlation between funding and enrolment dispersion in the tertiary system in Jamaica.

Further analyses of the figures also reveal that even though the government has stated two bases of funding the institutions, these are not being honoured. The basis for funding the UWI suggests that the funding should have been moving consistently with the growth in the enrolment figures (see Appendices I and II). Also, contrary to the stated policy UTech has not been receiving the full amount to cover its staff cost. This was seen from the analysis of the financial statements of that institution.

Table 1.4 shows that within the category of the single discipline teachers' colleges the contribution per unit varies significantly. This is because institutions are funded on the basis of staff complement.

Table 1.4: Government's Contribution per Student to the Teacher-Training Colleges

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002
	JA $						
Church	75.45	106.36	119.35	116.86	131.46	137.83	167.91
G.C. Foster	99.15	128.44	149.38	123.52	125.33	102.59	374.82
Mico	63.61	90.32	125.48	110.69	125.05	151.11	174.45
St. Joseph's	85.94	122.70	126.10	115.23	117.47	83.62	93.82
Shortwood	67.34	100.93	103.85	107.61	120.08	137.97	151.00
Sam Sharpe	68.01	93.43	91.08	81.50	82.68	78.02	108.07
Average	70.66	100.47	115.88	107.21	116.05	117.75	150.43

The issue of government funding of education in Jamaica has been a contentious one. Between 1972 and 1986 the policy was that of free education to the tertiary level. There was a change of government in 1980 and in 1986 the new regime placed a cess on higher education. This resulted in much student protest. In 1989 the government again changed hands and in 1993 another policy of cost sharing was implemented. It is clear that under the policy of cost sharing, consideration needs to be given to issues such as equity, efficiency and consistency. It is therefore against this background that it was decided to study the matter with the aim of arriving at a workable solution to address the problems identified above.

The study is concerned with higher education (HE), which is a sector within the tertiary system. It is necessary to define HE because of the loose manner in which the term is used. This chapter will do the following:

1. Discuss the definitions of HE and determine a suitable one for Jamaica
2. Give a brief overview of the evolution of HE in Jamaica
3. Raise the research questions in the context of the evolution.

The definitions of HE have been divided into two categories: simple and technical. The simple definitions give HEI a monolithic meaning; it is any form of education after a certain stage. The simple definitions quoted are:

1. Post-secondary education (www.mnvu.org/mnvu/265.jsp).
2. Post-16 or post-secondary education (www.studyukguide.com/jsp/content_server/faqs/glossary/)

3. Refers to education, training, research, and community service outreach at the post-secondary level (www.usaid.gov/pubs/sourcebook/usgov/glos.html)
4. Educational provision above Level 3 (i.e., above A level and the Advanced level GNVQ) and its equivalents in Scotland. (www.leeds.ac.uk/educol/ncihe/nr_411.htm)

With the technical definitions, HE is much more than post-secondary education. It is regarded as that form of post-secondary education which results in at least a certain level of certification. The description of such certification, however, depends on the educational system of the particular country. In the case of England, the level is the Higher National Diploma; for Australia it is a degree granted by a recognized HEI; for the USA it is at the associate degree level.

The technical definitions are:

5. Higher education courses are generally above the standard of GCE A-levels or National Vocational Qualification (NVQ) Level 3. They include degree courses, postgraduate courses and Higher National Diplomas. HE takes place in universities and HE colleges, and in some further education colleges. (www.hefce.ac.uk/glossary/glossary.htm)
6. Post-secondary education offered by a university or other recognized HEI, or through Open Learning Australia, leading to the award of a degree or higher level qualification. (www.anta.gov.au/textOnly.asp)
7. This form of education includes study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree, or equivalent degrees in other countries. (nces.ed.gov/pubs/esn/n99u.html)
8. Education provided by a college or university (www.cogsci.princeton.edu/cgi-bin/webwn)

To determine which, if any, of the above definitions relate to Jamaica one has to trace the usage of the term in that country. Post-secondary education in Jamaica has evolved since its independence in 1962. Until recently HE was a distinct sector with reference to university education. In the estimates of expenditure of the country from 1962 to 1967, funds were allocated to the education sector in five categories as follows:

1. Primary and all-age education – Primary went up to 12 years of age and all-age to 15 years.

2. Secondary education – From 12 years of age to 19 years depending on the type of institution. The junior secondary schools stopped at age 15 and the high schools stopped at age 17 or 19 if the institution offered pre-university studies.
3. Teacher training – According to the Sherlock Report 1989 the teacher-training colleges offered education equivalent to the secondary level. According to the report, "historically, Teachers' Colleges and the Jamaica School of Agriculture were regarded as offering education at the level of secondary schools. The latter fell under the jurisdiction of the Department of Agriculture."
4. Technical education – This consisted of the College of Arts, Science and Technology (CAST) and the technical high schools.
5. Higher education – This was solely the University of the West Indies (UWI).

Between 1968 and 1988 there were various reconfigurations of the education sector, however, HE was always the highest category and consisted only of the UWI. In 1989 the categories were reduced to three with the UWI joining the tertiary education grouping.

1. Primary
2. Secondary
3. Tertiary: UWI, CAST, the College of Agriculture, teacher training colleges and the community colleges

It is this latter categorisation that has complicated the discussion because in this grouping are various institutions with different missions. Also, as will be shown further, this new grouping did not result in a single model for funding the tertiary sector.

Tertiary education was defined in the Planning Institute of Jamaica (PIOJ) Labour Market Information Newsletter of Jamaica, issue number 38, June 2001, p.1 as "All tertiary programmes requiring matriculation of a minimum of four Caribbean Examination Council (CXC)/General Certificate Examination (GCE) subjects, including English and Mathematics, having a minimum duration of two years, and leading to the award of a certificate, diploma, associate degree or degree."

The definition has sought to provide a description for the tertiary education sector but has not solved the issue of Jamaica's use of the term "higher education". Howe (2003 p. 49) opined that tertiary education and higher education are used inter-changeably to be inclusive. He quotes Peters as saying "that education and training provisions in these third

level institutions may and in fact do include non-university and university level programmes, technical and vocational education and training, professional and paraprofessional training and continuing education programmes." While Howe's deliberation illustrates that the term "tertiary education" is inclusive, it still does not clarify the use of the term "higher education" in the Jamaican context. Based on historical usage in the Jamaican educational system, HEI refers to those institutions, which have the power to award at least the bachelor's degree. As such the government funded HEIs in Jamaica were regarded in the study as UWI since 1948 and UTech since 1986. Both institutions have governing instruments, which give them the authority to grant and confer degrees. The other institutions do not have such powers but offer tuition leading to the granting of degrees by the University Council of Jamaica or the Council of Community Colleges of Jamaica.

The financing policies for education in Jamaica have varied according to the priorities of the governing political parties or the economic circumstances of the country. The Hon. Omar Davis, the Minister of Finance for Jamaica (since 1993), in an interview granted for the study pointed out that prior to 1973

> *We have various approaches, which evolved over time, and essentially a part of the fees were assumed to be the responsibility of the Government, and in the case of the University of the West Indies – it has always been paid as a grant and then the remainder would be the responsibility of the student. As regards to the teacher training colleges, there was no specific calculation, the government sort of funded those which were ran by them and so I think the issue of specific policies by the government only evolved after there was a growing number of persons seeking tertiary education and then it became a financial problem.*

A review of the national budget documents since 1962 reveals that the cost of primary education has always been a total call on the national budget. The other levels in the education system, however, did not have this consistency in policy hence there were shifts from time to time. The records revealed that there were four policy shifts since 1962. These were:

- 1962 – 1973: Mixed system
- 1973 – 1986: Free education
- 1986 – 1993: The cess on HE
- Since 1993: Cost sharing

It is in this context that the main research question arises: "**What are the consequences (intended and unintended) of the different models adopted by Jamaica for the financing of higher education?"**

EVOLUTION OF HE IN JAMAICA

During the period of colonial control, the elites of the Jamaican society sent their children to the United Kingdom, the United States of America and Canada for higher education. This proved to be expensive and was of concern to the local elites and the colonial office. At the same time the Moyne Commission was established in 1938 to investigate the cause of the frequent labour unrests and anti-colonial agitation in the islands. It recommended, among other things, improvements to the education system of the West Indies. This coincided with the concerns of the local elite and was the germ for the establishment of higher education in the anglophone Caribbean, which was posed as a solution to the undesirable practice of journeying to other lands in quest of educational improvements at the higher level.

In 1943 the Asquith Commission on Higher Education in the colonies was established and its report argued for a single, unitary and residential University of the West Indies (Howe, 2000, p 17). The bases for such a system argued Cobley (Howe, 2000, pp. 12–13), were as follows:

1. It would help to cultivate a West Indian Outlook.
2. It would help to build a cadre of "responsible and well informed leaders in the Caribbean as it passed through a process of democratization and progress towards self-determination".
3. A single university could become the intellectual centre of the region.

It was against this background that the University College of the West Indies (UCWI) began in 1948 signalling the entry of the Anglophone Caribbean in the field of higher education. Cobley (Cited by Howe 2000) also pointed out that the syllabi and the awarding of degrees were the responsibility of the University of London through the Inter-University Council (IUC) for higher education in the colonies. Before long, however, signals were given to change the system and following the Cato Report (1958) a royal charter was granted which saw the establishment of the UWI from the UCWI in April 1962, as an

autonomous body to grant its own degrees. Notwithstanding the new status of the institution, the single unitary nature of the higher education system for the anglophone Caribbean remained. The intention of the Governments of the Caribbean that HE was to be the sole responsibility of the UWI also remained. It was against this background that the Minister of Finance for Jamaica in 1963 proposed the establishment of the Permanent University Grants Committee (UGC) for the funding of that institution.

In addition to the UWI, the other colleges fulfilled the role of lower level providers satisfying the intermediary need between secondary and HE. In 1982 the Government of Jamaica, under the leadership of the Minister of Education, Dr. Mavis Gilmore, attempted to change the unitary nature of the higher education system in Jamaica. Dr. D. H. Irvine was appointed to develop the proposal for the change. He proposed the establishment of a National Polytechnic of Jamaica, which was to be complementary to the UWI. The College of Arts, Science and Technology (CAST) was to be the vehicle for the new system, which would absorb the teachers' colleges and the College of Agriculture (Irvine 1982). The new HEI was to have come into existence in October 1983. The proposal did not receive full acceptance and hence died a natural death.

CAST, however, which was to be the hub of the proposed system was nonetheless granted new authority when its Scheme was revised in 1986 to enable it to grant degrees (The Jamaica Gazette Supplement 128A Vol. CIX, Friday, March 14, 1986 No. 25A). CAST thence entered the higher education sector. Further development came in 1995 when the government decided to grant full university status to CAST and it thereafter became the University of Technology, Jamaica (UTech). This was validated in The University of Technology, Jamaica Act, 1999 which established Charter Day as September 1995.

Since UTech, other publicly funded institutions have been allowed to join the HE arena in that the UWI has entered into arrangements with some colleges for the joint teaching of programmes. These are:

- The Edna Manley School for the Performing Arts, Jamaica for the Bachelor of Arts in Dance, Music, Theatre and the Visual Arts
- Mico Teachers' College, Jamaica for a Bachelor of Education in Special Education

- Shortwood Teachers' College, Jamaica for a Bachelor of Education in Early Childhood Education

As of September 2005 the Mico Teachers' College will become Mico University College affiliated with the UWI. HE in Jamaica has therefore shifted from a unitary system (UWI only) to one that is diverse (UWI, UTech and some programmes within the colleges). The study will show that the funding model used by the government has not shifted to recognise the new entrants to the higher education system. This has led to the first sub-question of the research, which is:

5. **What are the consequences of an unchanged financing model for a system that has shifted from a single provider to diverse providers?**

Another peculiarity of the Jamaican HE system is its dual nature. In the case of the UWI, Jamaica is only part-owner (regional ownership) while the other institutions are the sole responsibility of Jamaica (national ownership). A second sub-question arises also and that is,

6. **What are the consequences of financing both a national higher education system and a regional one?**

The dual nature also resulted in different processes for allocating resources and hence a third sub-question is

7. **What have been the philosophical underpinnings to the allocation of resources to HE in Jamaica?**

The answer to the third sub-question may lead to a fourth and that is,

8. **What models are available to the Jamaican government for allocating resources to HE?**

Based on the questions raised the objectives of the research were therefore to:

1. Analyse the different HE financing models adopted by Jamaica since 1962 and identify the consequences of each.
2. Analyse and identify issues involved in maintaining both a national and regional HE system.
3. Identify and analyse the philosophical underpinnings for a Jamaican model.
4. Recommend, if appropriate, a model suitable for the current Jamaican context.

Chapter two will address the fourth question and hence it will review the options available for the financing of HE and allocating resources to HEI.

CHAPTER 2
OPTIONS AVAILABLE FOR FINANCING HIGHER EDUCATION

The questions raised in Chapter 1 indicated the need to explore the various methods for financing and allocating resources to HE. The purpose of such an exploration is to provide a background and possible framework for assessing the various models that were adopted by Jamaica. There were two main aspects of the search for an appropriate financing model for Jamaica: the extent and method of paying the full cost of education (i.e., tuition, accommodation, living expenses and material) and the method of channelling the resource from the state to the institutions. The former is the financing method and the latter is the resource allocation method (RAM). This chapter focuses on how those issues have been dealt with in the literature.

The question that drove the inquiry of the literature search was the fourth sub-question "What models are available to the Jamaican government for allocating resources to HE?" The search led first to the broad issue of financing HE and subsequently to the narrow focus of how the resources have been channelled to the HEIs. The chapter is therefore divided in two sections, namely:

- Financing options and their consequences
- Resource allocation options and their consequences

At the end of each section theories about the issues were identified as forming the bases for the assessment of the Jamaican models in chapter 5.

FINANCING OPTIONS AND THEIR CONSEQUENCES

The survey of the literature reveals three broad options for financing HE. These are total private financing (privatisation), total state financing (tax funding), and shared financing between the state and private means.

Privatisation of HE has as its basis the libertarian view that the primary aim of institutions is individual liberty and this is achieved through the operation of the private markets (Barr

2004). The absence of the state's role in education is especially driven by empirical libertarians as exemplified in Hayek's theory of 1944 that the primacy of individual freedom, the value of the market and the affirmation that the pursuit of social justice is fruitless and harmful (ibid). More specifically there have been three arguments for privatisation of HE (Sanyal 1998). The first is the efficiency argument, which states that economic efficiency is achieved only if private entities pay directly for the services. Brazil, Japan and the Philippines were cited as examples where private university expenditure per student was 30–40 percent of that of the public institutions. The second is from the quality perspective and suggests that given individual choice, private institutions appear to be superior in quality because they are freely chosen when less costly public alternatives are available. Sanyal noted that this view was proffered by Schneider (1997) who pointed out that in Pakistan a sectarian teacher-training institution was able to increase the motivation of the staff and students and improve the work ethics (ibid). The third argument is based on equity and stated that where there are resource constraints growth in access is only feasible by encouraging demand driven private sector institutions. Enrolment rate at a much lower cost, for instance, was increased in Japan and South Korea as a result of their reliance on private provisions. Eicher and Chevaillier (2002) pointed out that the main reason cited for private financing of HE is guaranteed equity through acquired private benefits by way of higher income and social status, greater efficiency in consumption, better health, increased political efficacy and greater access to and better understanding of culture, science and technology. Notwithstanding the benefits being derived by individuals in the consumption of HE, the arguments above are insufficient to justify the absence of state funding. The reasons will be revealed as we proceed.

The socialist viewpoint, with its aim of equality, freedom and fraternity was primarily responsible for state involvement in education and in particular, HE. The socialists believed that social justice or equality could best be achieved through a totalitarian state or egalitarianism. They believed that that the state should be in charge of the production and financing of all aspects of education (Barr 2004).

In recent times state intervention has been proffered in order to achieve market efficiency and equity because the market is likely to be highly inefficient and also inequitable to the extent that knowledge, power and access to capital markets are correlated with socio-economic status (ibid.). Barr (2004, p. 293) further stated, "Social welfare is maximised

through the pursuit of economic efficiency and social justice (or equity)". The reason for intervention for the sake of efficiency is failure of one or more of the assumptions of the "invisible hand" theorem. This states that the market is efficient only in the context of pure competition, complete market, absence of market failure and the availability of perfect information. The standard assumptions are summarised in Table 2.1.

Table 2.1: Assumptions of the Invisible Hand Theorem

Basis	Standard Assumptions	Results of Failure
Pure competition	o Firms must be price takers o All have equal powers	o Monopolies and oligopolies o Discrimination
Complete market	o All goods and services are supplied at prices that cover the cost of production	o Missing markets – market fails to supply public goods. o Certain risk are uninsurable o Capital market fails to provide loans o The is no future market for skills being developed o Absence of complementary commodity
Absence of market failure	o Goods produced are not open to the society as a whole for use o Utility of the individual is derived only from the goods purchased and consumed and not from some other individual o Average cost does not exceed marginal cost	o Public goods – goods and services if provided for all are opened for use by all members of the society o Externalities – cost and benefits accrue to the society as a whole and not just to the persons who carry out the activity o Increasing returns to scale
Perfect information	o Consumers are fully aware of the availability and nature of the goods that are produced	o Inferior goods are produced and purchased o Consumers cannot properly determine price o Consumers are uncertain about future benefits

The failure of the assumptions as shown in Table 2.1 has justified state intervention in the markets by way of regulations, financing, production and income transfers (ibid.). With the issue of social justice, it is believed that inequity occurs because of three countervailing pressures: fear of the efficiency losses of high taxation; the fact that the rich generally have more power; and the idea that the poor might want some inequality to remain in the hope of benefiting if they too become rich (ibid.).

Those who therefore justify total state financing of HE usually base their arguments on the grounds of efficiency or equity (social justice). Harrison (1997) extracted the issues of externalities, social returns, equality of opportunity and equity as the bases cited for total state financing of HE. The arguments he identified were as follows:

- Externalities: HE benefits the society as a whole because of knowledge transfers through research and development, which lead to improved production techniques and increased outputs. This is linked to failure of the assumptions regarding the absence of market failure.
- Social returns: Graduates will pay higher taxes as a result of their higher earnings. It is therefore assumed that society will be repaid with the additional taxes.
- Equality of opportunity: Social justice demands that government ensures that each person in the society is given an equal chance to benefit from HE. Total state funding is therefore assumed to ensure that no one is excluded from HE because of inability to pay.
- Equity: Equality is achieved if there is redistribution of income from the rich to the poor. It is therefore believed that with the state managing the returns from labour it is able to redirect resources from the rich to the poor.

Some economists also point to the production argument to support total financing of HE. Accordingly, they have cited evidence to prove that societies with a more educated populace are able to produce more effectively and efficiently than those with an uneducated workforce. Eicher and Chevailler (2002) pointed to the economists who believe that education is a "pure public good". Barr (2004b) also summarises the other arguments for and against total state financing of HE. He calls them the "often-asserted" propositions which are the humanitarian, moral, social and fiscal arguments.

The Humanitarian argument states that HE is a basic right and should therefore be free. Barr (2004b) however countered that "*Food is a basic right, yet competitive supply at market prices is un-contentious. The equity objective is not free higher education, but a system in which no bright person is denied a place because he or she comes from a disadvantaged background*." The moralist states that it is immoral to charge for education, however it is countered that it is also immoral if someone is malnourished but such is not an argument for making food free for everyone, including the rich. Malnourishment suggests income transfers so that everyone can afford a healthy diet. The Social argument

claims that private financing promotes elitism. Barr believes that there is nothing inequitable about intellectually elite universities. The equity objective he believes should be a system in which the ability of the brightest students to study at the most intellectually demanding universities is unrelated to their socioeconomic background. The fiscal argument points out that graduates earn more and hence pay more income tax and if future taxes are greater than present public expenditure then that justifies public expenditure on HE. The opponents of this belief noted that only a quarter of Britain's revenue is derived from income tax and most of it (82%) is from those without degrees

Barr (2004) also expressed the opinion that even though HE is not a public good and the consumers are well informed about the market, it does conform reasonably well to the standard assumptions of the "invisible hand" theorem. He, however, did not agree that the level of conformity merited total state financing (tax funding). Tax funding he claimed was unaffordable, inefficient and regressive. Resource limitations were the reason for un-affordability. Inefficiency was based on the fact that there were also private returns as well as social returns to HE. Since HE was consumed mainly by the more fortunate in the society, tax funding was deemed to be regressive.

The literature revealed that as demand for HE increased and placed a strain on economies, the egalitarian argument diminished and increasingly it was observed that universal support was unsustainable, and instead of engendering equality, it caused inequity. Vawda (2003) argued that public expenditure generally favoured the more fortunate in the society because "decisions about the subsidisation of different levels of education are often not based on student characteristics and financial need but rather on the number of personnel and extent of capital expenditure proposed". Gradstien (2003) in his analysis of 21 countries showed that public spending on education was skewed towards benefiting the richest sector of the population. This is shown in Table 2.2 where only Panama, Romania and South Africa were the exceptions. In all the other countries the subsidy to the poorest sector of the population was under 20% and the richest quintile was the one benefiting from public subsidy.

Table 2.2 Gradstien's (2003) Analysis of the effects of Educational Subsidy in 21 countries

Country	Year	1st – Poorest	2nd	3rd	4th	5th – richest
Armenia	1996	7	17	22	25	29
Cote d'Ivoire	1995	14	17	17	17	35
Ecuador	1998	11	16	21	27	26
Ghana	1992	16	21	21	21	21
Guinea	1994	9	13	21	30	27
Jamaica	1992	18	19	20	21	22
Kazakhstan	1996	8	16	23	27	26
Kenya	1992/3	17	20	21	22	21
Kyrgyz Republic	1993	14	17	18	24	27
Madagascar	1993/4	8	15	14	21	41
Malawi	1994/5	16	19	20	20	25
Morocco	1998/99	12	17	23	24	24
Nepal	1996	11	12	14	18	46
Nicaragua	1993	9	12	16	24	40
Pakistan	1991	14	17	19	21	29
Panama	1997	20	19	20	24	18
Peru	1994	15	19	22	23	22
Romania	1994	24	22	21	19	15
South Africa	1993	21	19	17	20	23
Tanzania	1993	13	16	16	16	38
Vietnam	1993	12	16	17	19	35

It is also believed that total reliance on the state for financing HE operated best in the context of a centrally-planned economic system. It also hindered the growth in size and quality of HE and limited access to the less fortunate (Barr 2003). In Britain the real funding per student fell drastically by over 40% between 1980 and 1997; Australia was forced to introduce fees in 1989 in order to maintain quality; and the mixture of private and public funding of the American universities gave them the edge over their publicly funded Canadian counterparts. On the issue of access Barr stated that the argument that "free education" promoted access did not stand empirical testing because in 2002, 81% of the children from professional backgrounds gained access to higher education in the U.K. and only 15% of those from unskilled backgrounds were successful.

The unsustainability and the inequity of total public financing of HE have therefore led many countries to re-introduce private contribution to HE. Increasingly it is recognized that HE is of benefit to both the individual and the society, hence responsibility for payment should be shared. The most recent description of the joint responsibility is called cost sharing (Johns et al 1983; Psacharopoulos 1995; Psacharopoulos and Patrinos 2002;

Bevia and Iturbe-Ormaetxe 2002; The Investment Payoff 2005; Ziderman and Albrecht 1995; Higher Education: The Lessons of Experience 1994). Currently, in most countries, tuition fee payment is the main topic for discussion, with Germany and the Scandinavian countries resisting its re-introduction (Kaiser et al 2003).

The human capitalists and the public economists also support private as well as tax funding for HE. In addition to the social returns, the human capitalists believe that education has a private return to which the beneficiary should contribute. This is exemplified in Eicher (1998) who stated, "Education is an investment in man. It increases his productivity and hence his earnings. A rational person will therefore determine his level of studies so as to maximise the difference between cost and benefits and one therefore cannot see why the main beneficiary of the investment should not take part in its funding." The public economists believe that "in countries where public powers have a strong control over the institutions, fees increase their autonomy and their capacity for innovation" (ibid). They also believe that private contribution can be effective in three ways: coordinating the demand and supply of education in the various disciplines; motivating students to study as the effects on their pockets would discourage inefficient use of university resources; perform the function of price in informing about the perceived value of programmes (Kupper 2002; Ziderman and Albrecht 1995; Eicher and Chavaillier 2002). Cost sharing however does not by itself solve the problems of market efficiency and equity and so this has led to sub-options. These will now be addressed.

Having accepted joint financing of HE, the next issue has to do with the methodology to determine the share of the funding and the level of fees to be charged to students. This has given rise to debates about capacity to pay and state intervention in the setting of fees. Carlson (1992) cited by Ziderman and Albrecht (1995) offered the methodology used of "affordability" as a means of determining fees as he thought that it should be based on the capacity to pay. He used the disposable income of the students' household and the earning potential of graduates to calculate "affordability". In assuming that 10% of the average household's income was disposable and 10% of a graduate's future income was a suitable contribution, he estimated that students could contribute 28% of the direct cost of HE and 15% in the case of the poorest 30% of the population. Ziderman and Albrecht (1995, p 40) pointed out that the weakness in the methodology was that "the use of 10% of household

income to measure affordability is based on reasonable assumptions rather than on objective measurement of willingness to pay".

The alternative mode of addressing capacity to pay was to measure the price elasticity of demand for HE. The methodology measured the extent to which increase in tuition fees affected access to HE. Several empirical studies showed that the demand for HE is inelastic in relation to tuition fees. This meant that a moderate price increase would not discourage enrolment and would result in increase revenue (Ziderman and Albrecht 1995). Leslie and Brinkman (1988) found that in the USA the elasticity coefficient was -0.62, which suggested that a 10% increase in tuition fees would cause a decline in enrolment of 6.2% (ibid.).

Price elasticity was discounted on the grounds that it only measured the response to tuition fees and not the total cost. Also it did not explain the effect of price changes on the poorest sector of the society. Stager (1989), as cited by Ziderman and Albrecht (1995), adjusted for other costs such as books and accommodation and determined a coefficient of -1.46 meaning that a 1% increase in the total cost of HE would result in a 1.5% decline in enrolment. The demand for HE was therefore determined to be elastic in relation to total cost. Studies also revealed that the poorest group was most responsive to increases in tuition fees. Gertler and Glewwe (1989) (cited by Ziderman and Albrecht 1995, p. 41) revealed that in the case of Peru "the poorest 25% of the population was about three times as sensitive to price changes as were the richest 25%". Barr (2003, p. 8) described the issue of the responsiveness of the poorest group to HE costs as the equity problem: "Upfront charges are also inequitable. Better-off families can pay charges directly; and even a cash-strapped middle-class parent can borrow on good terms using family home as security. Thus, the options for borrowing are best for those who need them least".

The equity problem has been used to justify governments' use of price control in HE. Britain, for instance, does not allow flexible fees for HE but mandates a flat fee regardless of institution and programme. Eicher (1998) suggests that price control is the wrong solution for the equity problem and that it should be addressed through targeted assistance. Mingat et al (1985) also argued for targeted support to needy students as the more effective means of dealing with the equity problem. They believed that "cost recovery in higher education, coupled with the use of the public resources thus freed to expand lower levels of

education, would probably result in an unequivocal enhancement of equity in the education sector as a whole" (ibid, 12).

The discussion on the mitigating circumstances to relieve the equity problem has led to proposals about a loan and/or selective bursary scheme to reduce the financial hardships of needy students, graduate tax (GT) and income contingent loans (ICL) (Johnes and Johnes 1994; Eicher 1998; Financing Higher Education in Eastern and Southern Africa 2002; Creedy 1994; Jacobs 2002; Barr 2003; Kupper 2002). Gracía-Peñalosa and Wälde (2000) pointed out that GT is a public loan, which is repaid over the span of the beneficiary's working life. The difference with the ICL was that repayment started only after the recipient's income has reached a certain level, annual repayment varied with salary level and repayment stopped once the loan and interest has been fully repaid.

The Australian system of the Higher Education Contribution Scheme (HECS), adopted in 1989 has been cited as the most developed form of income contingent repayment scheme in existence. This is a deferred charge system where students repay a cost of their education after graduation and in proportion to their earnings (Karmel 1998; Chapman 2001; Chapman and Ryan 2002). Chapman and Ryan 2002 concluded from their study that HECS result in an overall increase in participation in HE and that it did not decrease participation of the prospective students from relatively poor families. They also pointed out that the success of a deferred payment scheme such as HECS was dependent on an appropriate administrative mechanism. According to them, success was dependent on a unique income identification system to accurately record individuals' income over time and also an efficient collection mechanism. That was because of the propensity of humans to avoid repayment obligations. In the absence of these, they emphasised, income contingent approaches will not work.

DECIDING ON AN OPTION

If efficiency and equity are the grounds for state intervention in HE then total state financing of HE could prevent those problems only in the context of a centrally-planned economy. It also follows that privatisation of HE can only occur in the context of perfect market competition and that joint private/public financing is suitable under imperfect market conditions. This, therefore, leads to the conditions precedent for deciding which option to choose for financing HE. This is summarised in Table 2.3. The model proposes that in order for an option to be considered feasible certain preconditions must be met. Thereafter the path and eventual outcome could be plotted on the decision tree, Figure 2.1.

According to Table 2.3 the conditions precedent for privatisation of HE are those of perfect market conditions where the private and social rates of return would have to be in equilibrium so that all programmes would have an equal chance to be demanded. There would also have to be freedom of access to any provider of HE services. There should also be no barriers to entry for anyone wishing to provide the service. All the conditions listed in the privatisation row are derived from the assumptions of the invisible hand theorem.

The table also suggests that the conditions necessary for total state financing are those associated with a centrally planned environment. In the centrally-planned system the state controls the total resource requirements of the HEIs to ensure that there is a proper balance between the societal needs for high-level trained individuals and the availability of these. Cost would be controlled through the employment practice of university staff being employees of the state as well as the enrolment management. Another intention of state control would be to prevent the equity problem and this would be prevented by placing limits on private benefits as individuals would be prevented from earning a premium for their educational qualification.

Recent developments have indicated that central control has proven to be inefficient, producing moral hazards as individuals are not encouraged to be productive. Albrecht (2003) pointed out that Germany with a highly-centralised system had a very low completion rate with a 4-year degree taking a student, on average, 7 years to complete. The system also favoured the more affluent as 59% of the students enrolled were from the upper or upper middle class and only 13% were from the lower class families. State

control also results in loss of academic freedom. This will be discussed more fully in the section on governance.

Table 2.3: Conditions and Results from Financing Options

<table>
<tr><th>Options</th><th colspan="2">Conditions Precedent</th></tr>
<tr><td>Privatisation</td><td colspan="2">▪ Free market conditions - social and private rate of returns are in equilibrium
▪ No price control - institutions are allowed to determine the fees to be charged
▪ The state does not offer any support to HEI
▪ Subsidy may be granted to students in the form of vouchers to attend institutions of their choice
▪ No state accountability mechanism either to supervise or control
▪ Freedom of access for all education service providers
▪ Staff are employees of the individual institutions and not the state
▪ Institutions are free to compete for students and research grants</td></tr>
<tr><td>Total State Financing</td><td colspan="2">▪ Total state control of educational planning and the education productive processes
o Detailed planning done only by the state
o HEIs operate as agents of the state
o Enrolment controlled by the state (matriculation requirements and quantity)
o HE staff are employees of the state
o State dictates staffing needs of HEI
▪ No market competition
o State organises staffing on rational bases to ensure no advantage over particular institutions
o Salaries and wages determined by the state
o Uniform wage rates regardless of job function in the HEIs
o Employers not allowed to compete for graduates
o Graduates are not paid higher salaries than non-graduates
o No distinction among the HEIs on the basis of quality
▪ No resource constraints</td></tr>
<tr><td rowspan="4">Publicly Subsidised</td><td rowspan="4">▪ Disequilibria between social and private rates of return to higher educational offerings
▪ Market based accountability model
▪ Students are allowed free choice of institutions
▪ Staff are employees of the institutions and conditions of service are decided on between the institutions and staff
▪ Institutions determine their own fees
▪ Government determines its contributions independent of institutions' fees</td><td><u>Upfront Charges</u>
▪ Severe budgetary constraints</td></tr>
<tr><td><u>Mortgaged Type Loan Programme</u>
▪ Institution specialising in lending for human capital development
▪ Large enough capital fund for the loan programme
▪ Labour market certainties</td></tr>
<tr><td><u>Income Contingent Loan Programme</u>
▪ National budget can manage upfront cost of university operations
▪ Taxation system is able to track all citizens throughout their lifetime
▪ Information to encourage participation from low-risk high return graduate
▪ Opting out provision for early repayment
▪ Provision for society to absorb risk for non-payment</td></tr>
<tr><td><u>Graduate Taxes</u>
▪ Mandatory participation
▪ Efficient income tax collection system</td></tr>
</table>

In the absence of the centrally-planned or the perfect market conditions state subsidy is expected to maintain the benefits, both social and private, of HE. The interventions options are upfront charges, upfront charges with loans for the needy, loans with income

contingent repayment schemes or loans with graduate taxation. The choice of any of the sub-options would be dependent on the preconditions outlined in the third row of Table 2.3. The general preconditions for shared costs of HE under the imperfect market are state supervision, students' freedom of choice, institutions' autonomy and government's freedom to determine its level of contribution.

Barr (2003) also suggests that central planning and control are more applicable to a total state-funding regime. In assessing the UK, he determined that there was a contradiction in policy when he compared the financing policy to "a wedding and four funerals" – one of the funerals being the level of central planning which negated the benefit of the introduction on an ICL scheme (the wedding). He stated that "in good communist tradition, the central planner determines both price and quantity" and that "in the same tradition, control is heavily bureaucratic". When price (fee) is left to be determined by the players in the market then the interplay will lead to efficiencies. The institutions therefore should be left to set their own price based on their perception of quality and the demand for their services. Government, based on its own resource limitations, can determine the extent of its support; and the students, based on their expectation of future benefits, can decide how much to pay to cover the difference between the institutional charges and the government's provision.

The discussion so far, with the sub-options, only addresses the mechanism for pricing and quality; however it does not address the equity problem, the case of adverse selection and the moral hazard that would result. Countries favouring upfront charges for their students are those who have severe budgetary constraints, as they are unable to provide the advance funding. While up-front charges are designed to address the institutions' need for funds it does not address the equity issue which arises from students of less advantaged background being unable to access HE. The provision of a loan for needy students also has problems because of the risks associated with non-payment resulting in high-risk premium. Regular financial institutions are not structured to lend for the purpose of human capital development as they have taken a risk averse position of collateralised lending. The uncertainty and intangible nature of further earnings also creates difficulties for this type of lending.

ICL and GT are considered equity participation schemes to avoid the ill-effects of the mortgage type loan scheme. They reduce the cost of risk by risk pooling among

participants and risk shifting to society. Risk pooling is possible because the higher income participants absorb the cost of the lower earners and those unable to pay. Risk shifting is when the society, as in the case of the Australian system, absorbs the cost of those in default. Jacob (2002), however, thinks that there are still the potential problems of adverse selection and the moral hazard. The problem of adverse selection occurs when there are too many high risk-low return graduates and the low risk-high return graduates opt out of participation. Moral hazard arises when beneficiaries do not exert enough effort to avoid default on payments. Jacob (2002), however, offered four solutions which are:

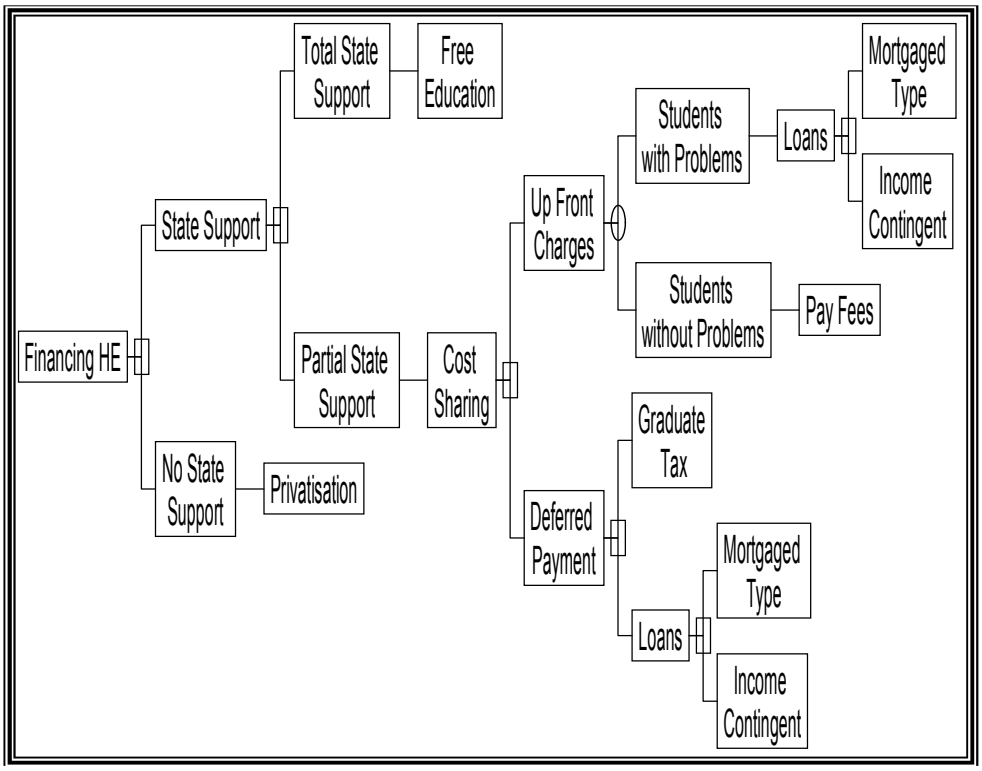
1. Government generating information on the risk characteristics, abilities and motivation of students so that the problem may be tackled directly.
2. An opting out clause as is the case of the Australian system where low risk high return students will be provided with an incentive to participate. The opting out clause would be made possible if there were a fixed limit to the default premium, hence repayment would not be larger than the principal plus the interest. Early settlement would therefore be encouraged.
3. Allowing the cost of default to be borne by the society thereby separating repayment conditions from risk-characteristics, preference and abilities of the students.
4. Making participation obligatory so that low risk students are forced to participate.

Jacob's proposals therefore dictated the preconditions for ICL and GT. GT, Gracía-Peñalosa and Wälde (2000) concluded, is more efficient and more egalitarian than ICL because it avoids reverse redistribution. For GT to work, however, there must be mandatory participation. ICL, however, can be built with the option for early exit thereby avoiding adverse selection and the moral hazard. In any case the preconditions specified in Table 2.2 are necessary.

ICL are therefore best suited for avoiding the moral hazard and adverse selection and GT is the best solution to avoid reverse redistribution but it has to be based on mandatory participation. Both ICL and GT require an efficient income tax monitory system to ensure compliance. They also are dependent on the country's ability to provide funds in advance to the HEI and depend on an efficient collection system to recoup this advance. Those countries that are unable therefore, to provide this mechanism, are advised to resort to the traditional loan mechanism to assist the less advantaged of the society.

The framework of preconditions can therefore be used to guide the process towards a financing option for HE of a country. The decision tree as per Figure 2.1 outlines the path available. If the conditions associated with central planning and the monopolistic market are fulfilled then the state can take the path of "no tuition" and full financial support for HE. When the conditions for perfect market competition exist then the path of privatisation may be followed. In the case of partial public subsidy, a country has to decide whether to have upfront charges or deferred payments. In the case of upfront charges there must be a loan scheme to assist the needy. The choice of the type of loan scheme will be dependent on the country's ability to manage the risk of non-payment as this would have to take precedence over the desire to deal with the equity problem.

Figure 2.1- Decision Tree for a Financing Option for HE



It is acknowledged that states do not, as a matter of course follow the path suggested by the decision tree. This is usually because they are more driven by political and ideological reasons. The point is, however, being made that if the issues of equity, efficiency and resource availability are the driving forces then the decision tree will suggest the path.

The options available to the Jamaican government for financing HE are privatisation, total state financing and allowing those who derive direct benefits to make a contribution.

There are preconditions to each option and these are outlined in Table 2.3. The ability to satisfy the precondition will determine the path to take on Figure 2.1. The figure also illustrates that with the path of upfront charges the society would be faced with students who would encounter no problems and those who would not be able to find the upfront sums. Assistance could be meted out to the students with problems by the provision of loans, whether mortgaged typed or income contingent. The literature also suggests that ICL is the preferred option to deal with the equity issue without causing moral hazard or adverse selection.

RESOURCE ALLOCATION OPTIONS AND THEIR CONSEQUENCES

A decision for state involvement in the financing of HE leads to the other issue of the method to channel support to the HEIs. Chevaillier and Eicher (2002) pointed out that public funding exerts influences on the functioning of HEIs according to the manner in which the funding reaches them. As such, they opined, there is a search for the best funding procedures that would stimulate the type of behaviour most desirable. For this reason consideration of any RAM must involve analyses of the philosophical underpinnings used to influence the functioning of HEIs. The literature reveals several debates which will now be discussed.

Initial Approaches to Resource Allocation in HE

Michael (2002) phrases the first debate in terms of political funding strategy versus formula funding strategy. The political funding strategies, Michael pointed out, were "characterised by negotiation and responses to critical stakeholders' wishes" and allocations were made according to an institutional political base, institutional negotiating strength and unpredictable circumstances. Ziderman and Albrecht (1995) classified all situations "where transfers are not related to objective institutional criteria as 'negotiated' allocations procedures." According to them, in that process "decision making does not depend on specific institutional characteristics (such as the number of students enrolled) but much more so on political relationships between actors". Three types of negotiated systems identified were:

i. Incremental budgeting – Institutions receive a flat increment on their previous budget.
ii. Ad hoc negotiations – bilateral agreement between institution and government

body.

iii. Fixed revenue agreement – agreement to release to institutions a fixed percentage of revenue.

The common feature among the three was that there was little relationship between the activity of the HEI and the funding that was received. "Changes in activities, such as enrolment increases, do not necessarily translate into funding increases, nor do funding increases necessarily imply taking on new activities" (Ziderman and Albrecht 1995, p. 112). It is difficult to classify incremental budgeting and fixed revenue agreement as negotiated RAM because they are mathematically derived and not subject to regular changes. The original basis could have resulted from negotiations but so do the components of any formula. This study therefore views negotiated funding as that which results from bilateral agreements between the state and the institution, is for a specific period and has no rational structure.

The point was also made that negotiated funding "enables the government to maintain a high degree of political control over the university system as a whole as well as over individual institutions" (ibid. p.108). Such a system provides no incentive for efficiency and does not enable HEIs to be adaptive to the labour market or students' demand. In Brazil for example, between 1983 and 1988 the Federal Government's contribution to HEI remained constant while the enrolment fell by 7%. Ziderman and Albrecth (1995, p.114) therefore concluded that "while negotiated funding has been the dominant form of funding for universities in the developing world, it has not served higher education well". They also expressed the view that many of the problems encountered did not stem from the funding approach per se, but from restrictions on the receiving institution's ability to control its operations. In some cases restrictions were placed on enrolment and ability to seek additional funds to supplement declining government income and to redeploy resources to be efficient and responsive to changing external demands.

Michael (2002) opined that the Political Funding Strategy violated the principle of predictability because allocations are subjected to political wind and there may be little or no logic between institution's allocations. He also thought that the approach was attractive to ambitious politicians and institutional leaders with a large political power base.

In addressing the issue of predictability and objectivity in funding, the formulaic approaches were introduced. The aim was to eliminate subjectivity as the allocations were

to be based on quantitative factors. Formulaic funding "is simply an algebraic expression of the relationships among quantifiable factors for the purpose of apportioning funds among different institutions" (Michael 2002). Based on this definition, Ziderman and Albrecht's three-fold classification of negotiated funding was rejected and incremental funding and fixed revenue agreement were determined to be formulaic funding models. With incremental funding the expression is as follows:

$$\mathbf{TA_1 = Y_0 * r} \qquad \mathbf{(2.1)}$$

Where TA_1 = Total allocation for year 1

Y_0 = Previous year's allocation

r = Rate of increase

The expression for fixed income agreement may be written as follows:

$$\mathbf{TA = NI * p} \qquad \mathbf{(2.2)}$$

Where NI = National income

p = Percentage contribution

Weiler (2000) pointed out that formulaic funding was focussed initially on input factors but increasingly have moved in the direction of output indicators. Other examples of formulaic RAM from the opposite viewpoint of input and output are given below.

i. Based on inputs (The Australian Relative Funding Model)

$$\mathbf{P_1 = B/S * G_1} \qquad \mathbf{(2.3)}$$

$$\mathbf{TA = \sum(P * S)} \qquad \mathbf{(2.4)}$$

Where P_1 = Price per student in cluster 1

B = Pre-determined macro-budget

S = The number of weighted students

G_1 = The weight of students in cluster 1

ii. Based on outputs (Denmark's Taximeter Model)

$$\mathbf{TA_a = \sum \{S_s(T_s + O_s + P_s)\}} \qquad \mathbf{(2.5)}$$

Where TA_a = Total allocation for institution A

S_s = Successful students per field of study

T_s = Tariff for teaching per field of study

O_s = Tariff for joint costs per field of study

P_s = Tariff for practical training per course of study

Orr (2002) believed that formulaic funding "replaces politicised decision-making concerning the higher-education budget with programmed decision-making determined by an agreed data input." As such, he concluded that it resulted in a stable, reliable and transparent procedure for allocating funding. On the negative side, however, Orr (2002) opined that it offered little flexibility and proved difficult to implement in places where there was the absence of reliable data. Michael (2002) also observed favourable and unfavourable consequences of formulaic funding. Advantages included the fact that it enabled uniformity in the institutional variables, it led to budget simplification, it could be used for bench-marking and it reduced funding conflicts, politicking and budgetary uncertainties. The disadvantages included rigidity, over-reliance on quantitative factors, and maintenance of historical inequity, linear interpretations and homogenisation of the HEI. Weiler (2002) adds that formulaic funding serves as a communication tool as its structure conveys governments' priorities. The characteristics and consequences of the initial debate on resource allocation are summarised in Table 2.4.

Table 2.4 - Negotiated Funding versus Formulaic Funding

	Characteristics	Consequences	Examples
Negotiated Funding	• Results of bilateral agreement • No consistency from year to year • No discernable quantitative basis for allocation	• High level of political control • No incentive for efficiency • Not adaptive to students' needs • Unstable - Arbitrary allotment • No predictability	• Input funding not based on any set quantifiable factors • Guyana where proposals for expenditure have to be submitted annually for approval
Formulaic Funding	• Algebraic expression based on quantitative factors	• Political control is limited to the manipulation of the initial factors • Could by its structure offer incentives for efficiency • Stable • Reliable • Transparent • Predictable	• Fixed income funding • Incremental budgeting • Input funding based on quantitative factors • Output funding

Formulaic funding by itself does not address all the issues related to the funding of HE. This is illustrated in the example of Honduras where the constitution provided for 6% of the total expenditure of the country to be allocated to the National Autonomous University of Honduras (UNAH). The university continued to offer courses that were not relevant to the labour market or students' demands, its administrative staff ratio to total expenditure was 50% while 0.1% of its budget was used for purchasing books. The result was that the middle class was attracted to the expensive private institutions.

Operations Management Contribution

The discipline of operations management has offered some factors as bases for computing resource allocation. Operations management is "the systematic direction and control of the processes that transform inputs into finished goods and services" (Krajewski and Ritzman 1993). In the educational system there is often confusion between "inputs", "process" and "outcomes", hence the necessity for clarification. Layzell (1998) pointed out that the teaching workload is sometimes wrongly classified. For instance, many states of the USA use it as a performance measure but "while this is an important measure of institutional resource use and says something about an institution's internal budget process, it does not say anything about institutional outcome." "Output" is related to "input" and "process" and can be considered as the result of input and processing, hence the formula:

INPUT + PROCESS = OUTPUT

Jackson and Lund (2000: 33) developed a table outlining the production process. In it they identified the outputs as "students" and "staff." Students were identified in terms of completion rates, academic standards, employability and progression to further study. Staff members were identified in terms of teaching and administrative workload. In agreement with Layzell, the framework of Jackson and Lund was adjusted to exclude staffing as an educational output. Research was also added to the list to compete the HE production components (see Table 2.5)

Input versus Output RAM

Operations management has raised the debate about the benefits of input and output methods of resource allocation. Chevaillier and Eicher (2002) phrased the operations management debate in terms of activity-linked funding as against results-based funding. Activities they defined as "inputs" and results are viewed as "outputs".

Activity-linked funding seeks to allocate resources to the institution by focusing on the microfactors of production of the education process. The microfactors are:

- Human resources for instruction, research and administrative support (inclusive of salaries, fringe benefits and professional profiling)
- Travelling activities
- Provision of materials
- Overheads

- Provision of Equipment and furnishing
- Maintenance activities for plant and equipment

According to this model funding is allocated on the basis of estimated costs for the educational inputs (Ziderman and Albrecht 1995).

Table 2.5 - Framework of the Higher Education Production Process as Adopted from Jackson and Lund (2000)

Inputs	Process	Outputs
Matriculated Students entering the higher education system	**Induction** to the programme /learning environment	
Staff - FT and PT establishment, individual and collective expertise, experience, qualifications (both academic and teaching), age, recruitment, appointment, induction, preparation for teaching and development	**Design of curricula and assessment** **Teaching and learning,** e.g., strategies and methods; effectiveness, innovation **Student guidance and support,** e.g., academic and personal tutor systems, careers advice, handbooks and other information, project supervision	**Promoted Students** – those who have been successful at one level and are qualified to move on to the next level.
Physical resources, e.g., accommodation, facilities, specialist equipment, library and information technology resources	**Student record system,** e.g., recording and reporting achievement	**Graduates** – those who have completed all the stages and receive certification
Financial resources, e.g., cost per student, cost per staff	**Management and administrative systems**	
External inputs, e.g., involvement of employers, use of external facilities or equipment	**Review and evaluation process,** e.g., peer review, student feedback, employer feedback	
Research problems, ideas and a priori methodologies	**Empirical work** – Data collection and analysis; testing and/or development of hypotheses	**Research publications and results**

Balderston (1995, p. 156–157) categorises "line item" or "object classes" as a form of input model of resource allocation. Layzell (1998) classifies "incremental" or "historic adjusted budgeting" as well as "formula budgeting" under the input model because they are "needs based" and result in a focus on what goes into the educational process. In incremental budgeting, the government begins by allocating to each university a certain sum based on past experience and then discusses how much increase or decrease to be effected in the coming year (Massy 1996, p. 38). Layzell (1998) has a limited view of formula budgeting as he defined it as "a mathematical basis for requesting and/or allocating funds to institutions of higher education, using a set of cost and staffing factors

in relation to specified inputs". According to this definition, all forms of formula funding are input RAM. As discussed earlier, initially formulae were based on input factors but this has long since changed. Ziderman and Albrecht (1995) committed the same error as Layzell when they classified formula budgeting as one their three types of input-based RAM along with line-item budgeting (LIB) and program budgeting

Output models of resource allocation distribute funds to institutions according to targeted outcomes. In its simplest form, output RAM seeks to fund institutions by the number of students attaining a particular level. Funding would be the product of the successful students at an agreed rate. "Performance-based budgeting" according to Massy (1996) is a form of output RAM and is more complex. Jones (1997) stated that with performance-based budgeting "resources flow only after the recipient of the funds can demonstrate that a specific outcome has, in fact, been produced." Carter (1994) lists four characteristics of performance-based budgeting (Layzell, 1998):

1. It presents the major purpose for which funds are allocated and sets measurable objectives.
2. It reports on past performance and uses common cost classifications that allow programmes to be compared rather than focusing on line comparisons.
3. It offers management flexibility to reallocate money as needed and provides rewards for achievement or penalties for failure.
4. It incorporates findings from periodic programme evaluations that are supported by credible information that can be independently audited.

El-Khawas and Massy, unlike Ziderman and Albrecht (1995) describe the UK system as an output model (Massy 1996). They concluded that the U.K. system:

- Focuses on assessable outcomes rather than plans, promises and assertions
- Divides the assessment work into separate educational and research components.

HEFCE (2003, p. 13) pointed out that the future year's amount may be adjusted if the institution "failed to meet the requirements of their funding agreement … This usually arises because institutions are unable to recruit or retain the number of students for which the previous year's grant was allocated". This claw-back mechanism definitely illustrates that the English system is based on outputs rather than input.

Kaiser et al (2001) informs us that Denmark instituted an output RAM in 1992 which was called the "taximeter-model" where funding was directly linked to the number of students who passed their exams. The 1995 evaluation revealed that there was more focus on students' need as a result of output funding. The 1998 evaluation showed that even further improvements were made to the system, as there was an increased focus on "value for money". It was observed that managers were more eager to find the best offer when buying new equipment or choosing a bank, unprofitable activities were more rapidly discontinued, and the institutions had improved their ability to adjust and take new initiatives, whereas before the reform they would often wait and do nothing until a real crisis occurred.

Ziderman and Albrecht (1995) proffer three adverse consequences of input RAM. According to them,

1. It could affect the access policy of HEI because funding is linked to enrolment of matriculated students hence it could result in an open-ended commitment on behalf of the government. The governments would then be forced to reduce the unit cost to control expenditure. In turn, the institutions would increase capacity in order to maintain funding levels and eventually would grow beyond their capacity, which would result in the lowering of quality.
2. It fails to provide incentives for efficiency because unit costs are not set against cost norms to outputs nor are there any incentives to reduce costs.
3. It leads to problems with respect to responsiveness: the government determines supply, hence the institutions were unconcerned with market demands, homogeneity among institutions was promoted, and research budgets for small institutions may be restricted when the same criterion is used to determine both teaching and research.

Ziderman and Albrecht (1995) could only draw on the experience of the Netherlands which was experimenting with output RAM. According to them the Netherlands was able to cut the drop out rate of HEI from 50% to 20% between 1987 and 1983. Joseph Burke (2002) noted that in the USA, linking performance to budgeting took two different forms; namely, performance funding and performance budgeting. Performance funding was tied to results while performance budgeting was where past performance was used as a factor to determine the budget for a future period. Based on the distinction, Burke determined that

19 (38%) states in the USA practice performance funding and 27 (54%) practice performance budgeting. He also examined the arguments for and against performance funding. The favourable factors were that it did the following:

- Added performance as a factor in state funding, hence resulted in the states linking funding to qualitative and quantitative factors of student learning or services. Institutions then are encouraged to become more effective and efficient in the use of resources and more responsive to the needs of students.
- Linked planning and budgeting unlike funding for inputs where budgeting and planning were disconnected.
- Urged state officials to identify their priorities and encouraged dialogue with campus leaders. Institution and policy makers are willingly focussed in the same direction.
- Fostered both external accountability and institutional improvement.
- Pressed campuses to become more client - and less provider-centred.
- Centred attention on undergraduate education.
- Rewarded good – and penalized poor – campus performance.
- Decentralized authority without loss of accountability.
- Stimulated concern with institutional as opposed to individual performance.

Burke also examined the arguments against performance funding as practiced in the USA and concluded that the criticisms were focused on the means and implementation rather than the ends and goals. In relation to the specific arguments, Burke rejected five of the nine arguments and offered mitigating reasons to explain the others. Table 2.6 is a summary of the criticisms and Burke's responses to them. Points 2, 3, 5, 6 & 7 were refuted and mitigating reasons were offered for point 1, 4, 8 & 9.

Table 2.6 - Burke's Responses to the Critics on Performance Funding

	Arguments	Burke's Responses
1.	Fails because of the difficulty of assessing results in HE	"The absence of acceptable direct measures of student learning outcomes explains in part the heavy emphasis on process indicators as surrogates for educational quality."
2.	Diminishes campus diversity	Some critics take the concept of diversity too far when they claim that each campus is unique. 7 of 11 states use indicators to distinguish the mission of the 2 year against the 4 year institutions
3.	Produces budget instability	The average change is small (1–6%) and the setting of weights, standards and scoring reduces the possibility of budget swings hence "the fear of budget instability really represents more anxiety than reality".
4.	Punishes the poorest institutions	Moving resources from institutions with poor performance may make improvement difficult. A programme where loss of funds would come only after repeated failure to improve would reinforce the idea that campuses are competing more against their own past performance rather than other campuses, would mitigate this issue.
5.	Combines the incompatible purposes of external accountability and institutional improvement	External accountability and institutional improvements are not incompatible but complimentary as both share the ultimate goal of improved performance. The argument is therefore not valid.
6.	Creates excessive costs for data collection and analysis	The benefits outweigh the costs (NPEC 1997)
7.	Stresses efficiency over quality	The choice of indicators does not support this charge. In a study it was revealed that 64% of the indicators related to undergraduate education and 10% to economic and workforce development.
8.	Subject HE to shifting state priorities	Arkansas, Colorado, Kentucky and Minnesota dropped their performance funding programmes because of political shifts and changing priorities These, however, were the exceptions rather than the rule. The priorities are not new as they have always been concerned with efficiency and effectiveness.
9.	Favours traditional over non-traditional campuses	The dearth of information about the non-traditional campuses has been the cause rather than the funding mechanism.

Quality and the Operations Management Debate

Operations management also linked the matter of quality to resource allocation. Table 2.7 summarises the inputs and outputs links to the quality of HE. It specifically groups the tangible and the less tangible aspects of how to judge the quality of inputs as against the quality of outputs (Massy 1996, p.58).

Table 2.7. Inputs and Outputs of Higher Education According to Massy (1996 p. 58)

	Tangible	Less Tangible
Inputs	New students matriculating	Quality and diversity of matriculation students
	Faculty time and effort	Quality of effort put forth by faculty
	Students time and effort	Quality of effort put forth by students
	Staff time and effort	Quality of effort put forth by staff
	Building and equipment	Quality, age, and style of building; age and quality of equipment
Outputs	Library holdings	Quality of library holdings
	Supplies, travel, etc.	
	Student enrolment in courses	Quality of education obtained
	Degrees awarded	Quality of education obtained
	Research quality: awards	Quality of research performed; articles and citations
	Service to the general public	Quality of services rendered

In considering the two aspects of quality as shown in Table 2.7 the difficulty in judging quality is seen. For instance, when looking at the tangible elements of staff time as could be depicted from work schedule, it is not as easy to determine the quality of effort put in by staff.

Harvey and Knight outlined five views of quality of which "the exceptional view" judges quality on the performance of the input factors and the "value for money view" relies on the end product for its judgement. The quality of inputs does not necessarily result in the same quality of outputs because there may be problems in the processing. There is, however, no uncertainty about ex post judgment of a finished product. The value for money view therefore provides a better basis for judging quality. This supports Layzell's (1998) suggestion that input RAM ignores quality as it focuses on the "cost to continue." Performance RAM, on the other hand is merit-based and by rewarding improvement in outputs it forces more to be done with less.

There is the argument, however, about the "quality trap" which implies that to allocate resources to an institution for good performance and punish another for failure would result in the good being better and the bad being worse. The bad would be starved of the resources necessary for the improvements. Sir Howard Newby, Chief Executive of HEFCE, reiterated this view in an address to the first cohort of students of the DBA in Higher Education Management at the University of Bath (February 17, 2003). In answer to a question, he pointed out that unlike the allocation process for research; HEFCE limited the use of quality factors for allocating resource for teaching because it would result in punishing the students who were not at fault. In the case of research, he further stated that it was only the institution that suffered as a result of poor assessment. This view could

lead to a preference for an input RAM because it seems to stress the point that in order to improve quality, funding would be placed on the input factors of the educational production process. A similar view was detected in the British Government's white paper "The Future of Higher Education" (2003) which proposed a rebalancing of funding based not only on research and student numbers but on the strength in teaching. The document also proposed individual rewards for teaching excellence. The effort therefore could result in a reliance on input factors in the resource allocation system for British HE.

Burke (2002) pointed out that the difficulty in linking quality to performance rests with the inability of the performance indicators to "capture fully the essential but elusive character of quality in higher education". Massy (1996, p. 318) believed, however, that one cannot simultaneously pursue high-assay investment, avert the consequences of poor performance, and contain unit costs. Something must give, he stated, and that something depended on the expected academic unit's behaviour and the restructuring environment within which the resource was embedded. This is outlined in Table 2.8, which gives the effects of performance funding.

Table 2.8 Effects of Performance Funding (Massy 1996, p.320)

Funding v. performance	**No Discretion (A) Q = Design Q**	Departmental Discretion on Quality	
		(B) Q = Frontier	**(C) Q < Frontier**
No linkage with performance	Incentives don't matter Fails on investment criterion	No incentive for maintaining Q Fails on investment criterion	No incentive for maintaining Q Fails on investment criterion
Positive linkage with performance	Incentives don't matter Partly meets investment criterion	Provides incentives for exemplary Q Partly meets investment criterion	Provides incentives for exemplary Q Partly meets investment criterion
Symmetric linkage with performance: rewards and penalties	Incentives don't matter Fully meets investment criterion Can't fall into the "quality trap".	Provides full incentives Fully meets investment criterion Can't fall into the "quality trap".	Provides full incentives Fully meets investment criterion May fall into the "quality trap".

Massy suggested that:

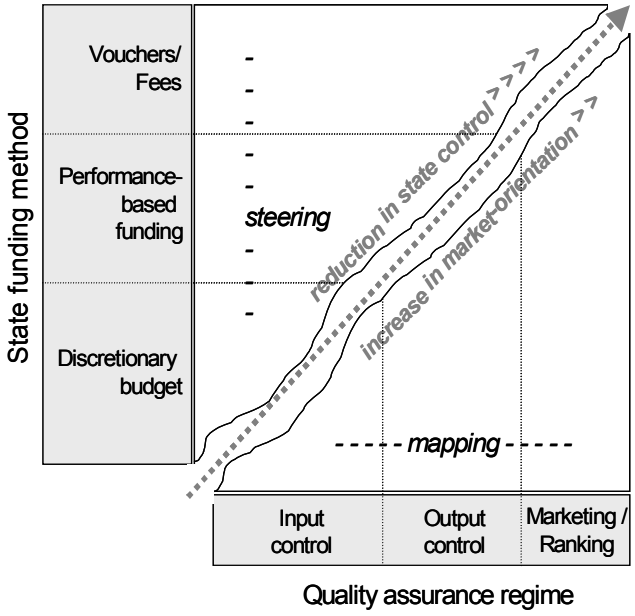
1. In a heavily centralised environment where the institution or academic unit had no discretion about quality, it did not matter what form of RAM was used, as incentives did not matter. Input RAM creates this type of environment.

2. Where there is no link to performance, there is no incentive to either maintain or improve quality.
3. Linking funding to performance (i.e., output RAM) provides incentives to maintain and improve quality.
4. Offering reward and penalties however, would result in the quality trap in cases where there were insufficient insights about quality and the requisite services needed to support the growth of quality consciousness. Massy (1996, p.322) suggests that in such a case, an effective quality program alongside the symmetric performance-based funding, could mitigate the problem of the quality trap.

Table 2.8 therefore suggests that in order to assess the effects of any RAM on quality it would be necessary to ask two questions

1. What is the HEIs' level of discretion of quality? Are they operating at or below the quality frontier?
2. Does the RAM support the HEI discretion on quality?

Figure 2. 2: Orr's Trajectories and Congruence of a Coordination Framework



Orr (2005) points to a link between RAM and the quality assurance mechanism (QAM). According to him, funding provides a steering function for the HEIs and the QAM performs a mapping function (i.e., to clarify or explain the performance of universities). In

order to properly indicate the effects of the funding on the quality of the institution it was necessary that both complemented each other. For this reason the type of QAM should correlate with the funding method. This is explained by Orr's trajectories and congruence of a coordination framework, Figure 2.2

On the vertical axis were plotted the funding methods and the QAM was on the horizontal axis. The RAM and the QAM were divided in three groups each. The discretionary budget was the first RAM and included all forms of funding methods whereby the State allocated by way of detailed input methods. The other methods were performance and voucher. Input control QAM correlated with discretionary budgeting as it judged the effects of the funding on the input mechanisms. Compulsory accreditation systems were classified as input control QAM because with it the state established input standards against which it judged the universities. Such a system Orr explained has the disadvantage of the state stifling innovation if the standards are too conservative. Also there is no way of measuring when the funding is sufficient as the HEI diverts its efforts away from the accredited courses. This has resulted in the move to more output control measures whereby the university is responsible for producing a particular number of graduates, which are funded by the state. As such output QAM is congruent to performance funding. Voluntary accreditation systems were classified in the marketing category of QAM. This is because the university may choose to participate in order to place itself better in the market. This system is more suitable for a voucher system in order to inform the students about the better institutions. The coordination framework leads to the Orr questions about assessing RAM and quality. These are:

1. Does the funding method correlate with the method of quality assurance?
2. Does the quality assurance method enhance the information provided via the funding method, or is it just bureaucracy?

The Orr framework therefore suggests that the RAM and QAM need to be correlated in order for judgement to be expressed on the use of the funding. Massy, however, makes a more direct link as he believes that performance funding could in some circumstances lead to improvements or maintenance of quality.

Productivity and the Operations Management Debate

Operations management has also introduced the concept of productivity to the resource allocation discussion. Bok, Zemsy and Massy (Cited by Massy 1996) pointed out to the

Hungarian government that incremental budgeting has mainly negative incentives because it gave university officials no reason to effect savings since reduction in expenditure led to reduced state appropriations. As a result officials would be inclined to spend all the money they received, whether they needed it or not, and exaggerate their problems and needs in order to receive more money in the future. Such a system also contains no incentive to consolidate or shut down inefficient programs.

The traditional way of measuring productivity in HE which has been the use of input factors such as staff/student ratios and the amount of funds spent on the different operating elements such as libraries, research and administration, have often been quoted (Winkler, 1990; Massy, 1996). Productivity is defined as "the ratio of output to input in an organisation" (Price & Mueller, 1986 cited by Massy 1986). This definition is for a single output/input environment. For the multiple input/output environments, however, Massy (1996) defines productivity in terms of benefit to costs as per equation hereunder:

$$\text{Productivity} = \frac{\text{}}{\text{Total cost}}$$

This leads to Blackman and Wolff's (1989) idea of gross productivity, which is "the number of units of output produced per unit of input, with no attempt to adjust for any accompanying changes in product quality" (ibid). Output RAM influences the numerator, hence its increase, with the denominator being constant, results in an increase in productivity. By focusing on output the Government could exercise the market function by adjusting its purchase-contract prices and quantities in response to changes in absolute or relative institutional performance (ibid). Input RAM affects the denominator, therefore, its increase, with the numerator being constant, signifies a decrease in productivity. The logic of the mathematical argument of productivity therefore proves that controlling outputs is better for influencing productivity rather than for controlling inputs.

Accountability and RAM

Accountability is "the obligation of institutions to report to others, to explain, to justify and to answer questions about how resources are being used and to what effect" (De Boer and Goedegebuure in File and Goedegebuure 2003, p.212). The public needs to ensure that the institutions' budgets are not overspent thereby requiring further appropriations, funds are not inappropriately used, and the cost of education is not unnecessarily high. Massy (1996,

p. 38) cautioned that "without accountability institutions have tilted too far towards research and scholarship, failed to adapt to student aspirations and needs, and paid too little attention to efficiency." A relationship has been detected between the models of accountability and resource allocation. Ferlie et al (1996) cited five models of accountability which are further placed in two broad categories. The link between the accountability models and RAM is depicted in Table 2.9. Concerning the concept of accountability to staff, Ferlie et al reported that in a National Health Service survey this concept received poor ratings. They also determined that the problem with the downward accountability had to do with the absence of a mechanism to ensure compliance with stakeholders' views. The classical public administration model and the market-based models were the ones with some form of traction. These will be assessed against the type of RAM.

Table 2.9: The Link between Accountability and RAM

Base	Sub-Categories	Traits	Links with RAM	Type of Control
Politically Based System	Accountability Upwards	Classical public administration doctrine Local decision makers are regarded as agents of those who appoint them	Input	Ex ante control system which include state regulated admissions requirements, curriculum, examination system, staff employment and revenue and expenditure,
	Accountability to Staff	Board members are accountable to the professional groupings	Input	Professional dialogue and representation on governing boards
	Accountability Downwards	Influence and responsibility are devolved	Input	Informal dialogue and stake holder meetings
Market-Based	The New Rights Model	Citizens are viewed as consumers	Output	Ex post factors judged against quantified standards
	Management by Contract	Providers of services are held accountable to their purchasers through agreed contracts	Output	Ex post based assessment against contract

Careful monitoring of the inputs has been the traditional form of accountability as per the classical public administration doctrine but as Massy pointed out governments are moving away from this system and relaxing line-item control. The U.S. system was quoted as an example where chancellors, in an atmosphere of severe appropriations cuts, were able to negotiate the change from LIB by pointing out that they could not be held responsible for making the university more efficient without the power to allocate and reallocate resources internally. Accountability and micromanagement do not mix because when decisions

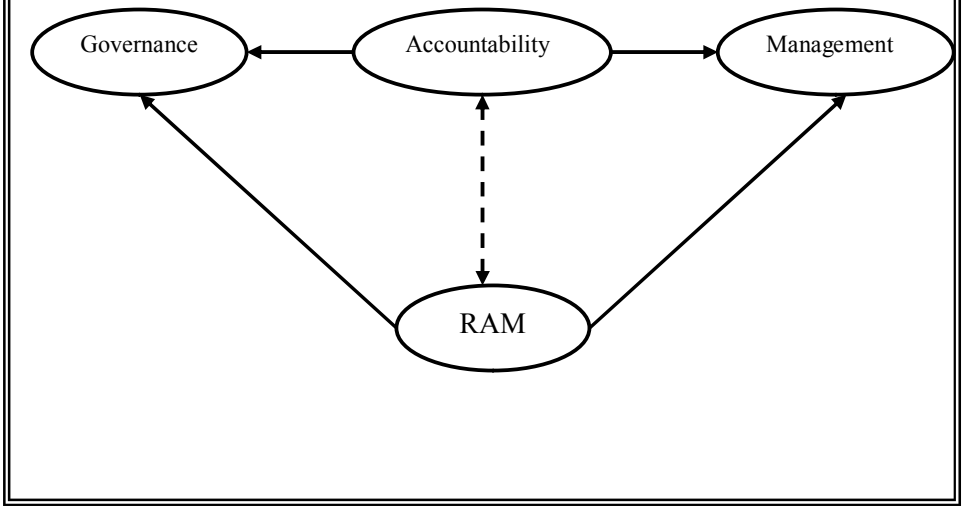
about the quantity of input are taken at the governmental level, institutions can shift the blame for reducing quality of outputs (Massy, 1996).

Accountability was the original reason proffered for state management of HE but on the other hand, as Jongbloed (File and Goedegebuure 2003) pointed out, the trend towards institutional autonomy has been accompanied by a demand for more accountability. Both could be achieved by output funding because "reduced state intervention in operational matters implies that governments are less concerned with how funds are spent (on inputs) and increasingly interested in the achievements (the outputs) produced from the funds."

Thomas (2001) suggested, that in the English system accountability started with the financial agreement between the funding body (HEFCE) and the institution receiving the funds. The financial agreement is in broad terms and implies a weighted volume of activity, which is being funded against the resource being allocated (HEFCE 2003). If funding is provided for additional places and the institution fails to recruit as targeted, then funding is reduced. This, however, is subject to a second chance being given to enable the institution to overcome start-up difficulties. By so doing HEFCE ensured that additional resources led to increased activities. Input RAM, however, does not guarantee increased activities. As was pointed out with the German system, spending more on inputs did not result in educating more students. The output models therefore provide better bases for accountability because they offer mechanisms for benchmarking and judging results. A system of ex post control which judges institutions by results against contracts or standards therefore provides a better basis for taking action.

Accountability and its relationship with resource allocation must also be judged in the context of the governance and management systems adopted by a country because it is the glue which ties the two together. The relationship between the four is illustrated in Figure 2.3. Both the RAM and the method of accountability inform each other. Accountability balances the conflict between governance and management and the RAM supports both. The rationale for this statement will become clearer in the ensuing discussion.

Figure 2.3: The Relationship between Accountability, RAM, Governance and Management



Governance and the Accountability Perspective on RAM

Peril and Promise (2000), a World Bank Task Force review of HE in developing countries, stated, "the term 'Governance' indicates the formal and informal arrangements that allow higher education to make decisions and take action." The report also distinguishes between external and internal governance. The former has to do with the relationship between the HEI and its supervisors and the latter with the lines of authority within the institution itself. This description projects governance as a plan, but it could also be viewed as an interactive relationship among actors and this is born out by Boer and Geodegebuure (File and Goedegebuurre 2003) who defined Governance as "the structure of relationships that brings about organisational coherence, authorised policies, plans and decisions". Balderston (1995, p.55) brought both aspects together as he defined governance as "the distribution of authority and functions among the units within a larger entity, the modes of communication and control among them, and the conduct of relationships between the entity and the surrounding environment."

The nature of the financing relationship with the HEI has often caused problems for its decision making and policy framework as society wrestles with the issues of funding and control. Academic independence is usually a cherished phenomenon in universities and this independence has been seen as necessary in order for the organisation to continue to

generate knowledge in teaching and research as well as the conscience of the society. According to the Columbia Encyclopaedia's definition, academic freedom is "the right of scholars to pursue their research, to teach, and to publish without control or restraint from the institutions that employ them." On the other hand there is the matter of accountability for the expending of funds. The battle between academic independence and public accountability is therefore brought to light in Shattock's (1983) statement that "universities may be autonomous self-governing corporations but in budgetary terms they are firmly tied to a comprehensive system of government resource allocation and expenditure control."

For many years it was thought that input RAM, negotiated budgeting and earmarked funding offered the best means of balancing the conflict between management and the governance elements of the HE system. However, these have proven inefficient and problematic for administration. The system of governance associated with these funding models has been described by Peril and Promise (2000) as state control. The report noted that many developing countries have gravitated toward state control, as they believe that governments are entitled to control systems that they fund. State control of higher education however has tended to undermine many major principles of good governance because the direct involvement of politicians has generally politicised higher education, widening the possibilities for corruption, nepotism and political opportunism (ibid.). The alternative governance system suggested is state supervision where the state is responsible for broad policies and national direction, and channels its resources in support of its stated policies. Under such a system funds are allocated to achieve results, levels of funding are determined by objective factors and institutions are at liberty to gain from efficiency savings. With these RAMs, governments do not get involved in the minute details of the institution's expenditures as it plays the role of a consumer by procuring the finished product at an agreed rate. Faulkner (Zeghal, 1999) pointed out that this system is a form of management control which when accompanied with efficiency-oriented measures of performance, permits government decision making to choose those programs that will most effectively meet its objectives. The HEFCE system of allocating resources to institutions using the criteria of enrolment modified by retention, subject rating, unit prices, and quality factors, prevents intrusion into an institution's detailed internal affairs by the funding mechanism. By using this model the government focuses on controlling the cost of the output (educated students) without being accused of meddling in the internal affairs of the institutions it supports.

Management and the Accountability Perspective on RAM

RAM must support the management principles that govern an institution. Therefore, the method necessary for accountability should also be compatible with both the RAM and the management principles. As societies move towards state supervised system of HEI governance, universities find themselves operating in increasingly complex environments, which require strategies to strengthen their competitive positions while satisfying students' demands and achieving various quality and performance targets. Leaders of these institutions cannot therefore just move with the tide but have to be able to be proactive and responsive to service demands. Strategic management, "that set of managerial decisions and actions that determines the long-run performance of a corporation" (Wheelen and Hunger, 2002, p.2) has become the preferred mechanism to cope with the increasing complexity of managing HEI. Wheelen and Hunger (2002) reiterate Chandler's (1962) view that changes in corporate strategies lead to changes in organisational structure. Chandler posited that as new strategies were created they stretched the old structure to the limit hence new structures had to be created to deal with the new situations. HE management systems that are dependent on state control cannot be responsive to changing circumstances, as they have to await instructions to act.

Strategic management can best be practiced in an atmosphere of flexibility, as it requires organisations to be responsive to calls of the business environment for change. RAM that is bureaucratic and does not support quick decision-making can therefore destroy the strategic intent of an organisation. Michael (2002) proposed the "strategic funding approach" which could enable HEIs to operate from a strategic management perspective. This approach he stated is "based on a long-term projection of the state's needs and direction (economic, social, medical, political, etc.) and the determination and allocation of resources to these needs/directions while institutions are free to align themselves with the state's priorities to the extent that they want state's resources". The problem with the approach, he noted however, was the state's inability to sufficiently and effectively make long-term strategic forecasts. He therefore suggested the "adjustable formulae funding strategy" that would allow a portion of the funding approach that is quantifiable to be built into a formula, the portion that is political to be handled politically, and the portion that is strategic to be handled strategically. In any case the point is made that the development of

RAM must take into consideration the thrust for strategic management in HE and the fact that this is not supported by input-based, negotiated or line item budgeting.

RAM that is concerned with objectives and targets and leaves it to the discretion of the institution to adopt the relevant strategies and choose the necessary inputs to achieve the objectives is the preferred choice. It is understood that in setting strategic objectives, an institution would take into consideration government's policy as well as market demands. The government can maintain its influence by linking its support to specific outcomes. Hence by using RAMs that are output-based, formulaic and issued as block grants, governments will be able to avoid placing stumbling blocks in the strategic path of the university while at the same time achieve its political objectives.

Vilalta (2001) gives an example of the Catalan University system in Spain, which had shifted to a programme-based contract formula, which in turn opened the way to a system of financing and control of academic outputs for universities in the region. The positive results he cited were respect for and promotion of:

- A new framework for relating with government.
- Funding based on the results.
- Predictability in allocation.
- Promotion of dialogue between government and universities.
- Possibility of introducing benchmarking mechanisms into the university system.
- Transparency of the results of universities' activities.
- Basis for accountability to society.

All the above suggest that an output-based RAM invariably leads to a flexible management system and market-based accountability. He pointed out, however, that without care in designing the accountability structure there could be the following pitfalls:

- Problems in defining common indicators.
- Annual revision could lead to inter-institutional mistrust.
- It could provide a mechanism for extreme competition between universities.
- It could lead to problems of budget restrictions under conditions of austerity.

The HE governance authority and its management have to be held accountable for the resources which it is allocated and accountability is the factor that balances both governance and management. Therefore, any assessment of accountability must take into consideration the extent to which the system enables both governance and management.

The following questions therefore need to be answered in assessing for accountability in a RAM:

1. Type of control: What are the bases on which the state examines the use of the resources? Does it use ex ante or ex post factors?
2. Accountability model: What accountability model is used? Is it politically or market based?
3. Type of governance system: How does the state monitor the HEIs use of resources? Is it a state supervised or state controlled system?
4. Management system:
    a. Does the RAM enable independence in the internal planning of the HEI? Does the HEI have to await government response before new initiatives?
    b. To what extent does the RAM provide the management of the HEI with certainty about the availability of the resources?
    c. To what extent can management predict the amount to funding to be allocated?

Earmarked Versus Blocked Grant Debate

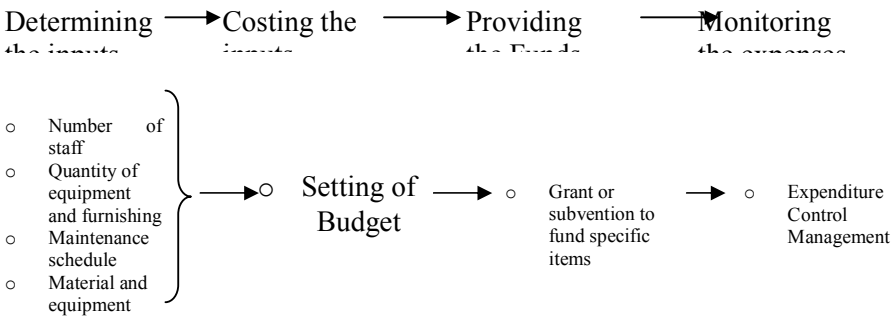
The notion of accountability has also led to the discussion of whether the funds granted should be earmarked or issued as blocked grants. Jongbloed (in File and Goedegebuure, 2003) described earmarked funding as that which can only be used for specified objectives. Funds that are not used for the particular expenditure or activity must be returned to the funding authority. With blocked grants, on the other hand, the institution can "decide for themselves how to finance their operations to produce the intended outcomes". Line item budgeting has been cited as the best example of earmarked funding. This type of funding, Sanyal (2002) described, was where the institution receives funding by expenditure categories (line-item) such as personnel, investments, teaching, material, travel expense and building maintenance. Examples of countries which practice earmarked funding are France, Germany, the Czech Republic, China, Nigeria, and Uganda. The provider of the funds would consider every detail of inputs in order to have them valued and such costing would in turn determine the amount of funds to be provided. Monitoring thereafter is by controlling the expenses. The process is illustrated in Figure 2.4.

In this system the central authority controls the income and approves expenditure by objects or activities. The operating units are only responsible for expending the funds

according to the approval limits. Expenditure variance reports are most important in this system as they provide the information for the monitoring exercise.

Gobbels-Dreyling (2003) stated that the German system with a strict use of earmarked funding depended on a structure of ex ante control to determine adequate use of funds. The state regulated the admissions requirements, the framework of the curriculum, the examination system and the employment and salary scheme of the staff and the revenue and expenditure of the HEI. The system resulted in increased public and political control in the 1960s and 1970s and eventually ended with direct state intervention in the internal processes of the institutions. The level of inefficiency that resulted in the system was shown in the fact that while enrolment was declining expenditure was increasing. It was therefore concluded that a complex system like higher education cannot be regulated and

Figure 2.4: The Processes of the Input RAM



controlled centrally because the state's intention to guarantee the proper spending of funds was counteracted by the attempt to regulate in detail (ibid.).

Of line-item budgeting and its object class which determine the funding, Balderston (1995, p.157) stated, "the trouble with the object-class budget is that it is almost completely devoid of any conceptual representation of what the institution is doing". The main problems therefore with earmarked funding are that it offers no incentives for efficiency gains, it stifles initiative, and it causes encroachment on institutional autonomy. Little wonder then that Weiler (1998) stated "no change in higher education financing has been more consequential than the change from line-item budgets to block grants (lump sums). In the overall move towards greater autonomy … this shift has been the single most important factor". The most significant steps in the transition to block grant funding, which Weiler further identified, were allowing universities to use funds from unfilled staff positions to cover operating expenditures in teaching and research; allowing limited

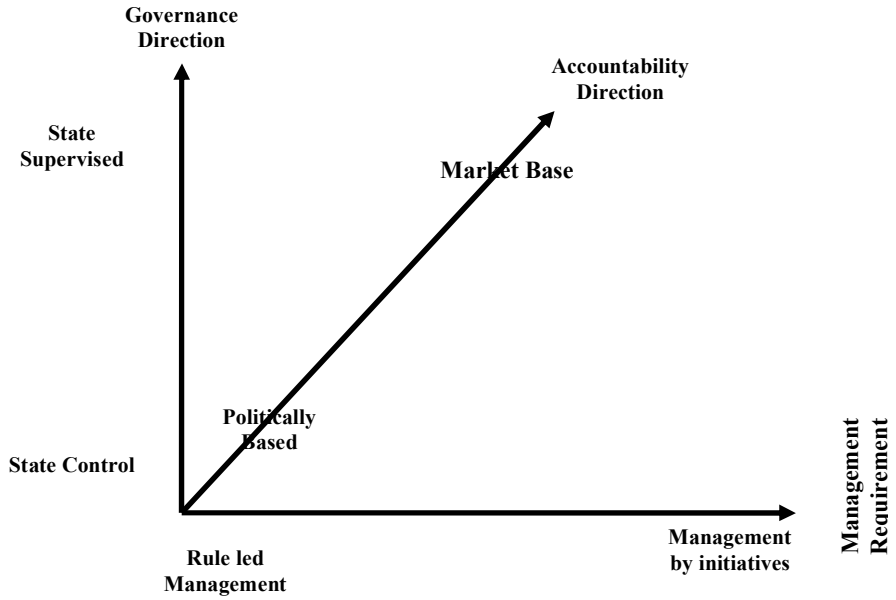
transfers between line-items; and selecting a number of instructions for pilot projects to try out more encompassing schemes of block grants.

From the experience of the USA Weiler (1998) points out that with block grant funding government was able to conceal budget cuts in the total allocation; it enabled performance to be tied to specific objectives rather that expenditure demand it resulted in the establishment of conditions for a successful autonomy-accountability relationship in the education system; caused the debate about the evaluation of outcomes which includes indicators for completion rates in different programmes, research productivity, employment record of graduates and the number of scholarly awards; and provided the opportunity for cross-subsidization between programmes so that the savings in one can be invested in another. With the proper framework Weiler suggested blocked grant funding appears to be better suited for HE financial administration.

Accountability-Resource Allocation Link

The discussions above suggest that the market-based accountability model is consistent with the state supervisory governance system as well as the model of management by initiatives. It is also consistent with the intention of blocked grant funding. Conversely the upward politically-based accountability model is consistent with the state control governance system and the model of "rule-led management". Rule-led management means that the HEI administration is unable to take decisions but either has to consult with documented instructions or some superior authority. It is also suggested that the RAM dictates the accountability-governance-management model. Input-based RAM, whether it is negotiated or formulaic, dictates politically-based accountability along with state control governance and rule-led management. Output-based RAM, however, suggests market-based accountability along with state supervised governance and management by initiatives. The relationship is illustrated in figure 2.5.

Figure 2.5: The Accountability-Governance-Management Relationship



Economist's Perspective

Economics is the "study of the means by which societies allocate scarce resources" (Friedman, 1994). As such, economists have generated a debate about the interaction between demand and supply in RAM of HE. The issue from the perspective of this discipline is whether resources to HE should be demand or supply side driven. According to Kaiser et al (2001, p.25) demand-driven funding must be seen in the context of the introduction of market type mechanisms in public sector institutions. The argument is that by providing the client (student) with a limited amount of funds, he being aware of the scarcity will behave like a critical consumer and use the funds efficiently.

They also opined that the criterion to be used to determine the market function of a RAM is the question "who receives the resources from the public authorities to fund teaching activities?" As such, they believe that the voucher system, where students are given negotiating instruments to take to the institutions of their choice, is the only demand side RAM. Another criterion suggested for making the distinction was to use the "money follow" concept. As such enrolment driven funding could be classified as demand side funding since "Students may influence the budget of higher education institutions by their choice of programme (voting with their feet)" (ibid. p.27). Kaiser et al counteracted this idea by pointing out that this was an insufficient base and other conditions for free market

success must also be present. Those were free access of suppliers and customers, market transparency and the existence of a price mechanism. Ziderman and Albrecht (1995) conclude from a different perspective that demand-side RAM is the voucher system. They made a distinction between the criteria for funding and the context within which the funding decision is made. According to them input and output funding occur in more restricted environments – where institutions are not allowed to distinguish themselves on the basis of price, to deploy their resources where they see fit, or to control their enrolments. A loosening of these restrictions shifts the system from direct to indirect funding. As a result they deemed student-based funding as an adjusted input-based funding system, in which student's choice is the main determinant (ibid.). This study accepts the view that the voucher system is the purest form of demand-side RAM, however, in an imperfect market the government can use enrolment to determine the level of resources to allocate to an institution to assist consumers (students) to address the distortions of the market. The money follow student concept though not demand-driven is a mechanism to address the inequity in the allocation of funds between institutions.

Chile, in its 1981 reform, experimented with the voucher system. Brunner and Briones (1992) (ibid) revealed that in the Chilean experience:

i. There was no evidence that it influenced quality
ii. Inefficiencies remained as the students/staff ratio continued to be high
iii. Access was biased in favour of the upper income sector of the population.

They also cautioned that the voucher system could lead to the lowering of quality as students would gravitate to institutions of low standard and offering an easy route for completion; it would also result in problems for countries where the labour markets do not operate smoothly and also undermined the undertaking of costly but essential programmes.

Palacios (2003) mentioned that economists advocated the voucher system because it increases consumer sovereignty thereby increasing efficiency in the education market and could be used to target particular social groups, thereby increasing access. Regarding the the weaknesses, he stated that it was costly to administer and was susceptible to abuse as the case of the Individual Learning Accounts program in the UK proved. Second, it could result in adverse public perception about the transfer of funds to private entities. In the USA he mentioned, "a major obstacle to the introduction of voucher-like systems is the perception that public funds are being used to sponsor religious activities."

FRAMEWORK FOR DETERMINING A SUITABLE RAM

The debates on a suitable RAM for HE have been as follows:

1. Negotiated versus formulaic funding
2. Input versus output models
3. Earmarked versus blocked grants
4. Demand-side versus supply-side driven

Figure 2.5 depicts the flow, which shows that formulaic funding is preferred to negotiated, variable formulae is preferred to fixed formula, output is considered better than input RAM, blocked grants is preferred to earmarked funding and supply-driven funding is more appropriate than demand-driven funding.

The accountability-productivity-quality discussion and its result in the Operations Management Matrix (see Table 2.10) provide the answer to the first two debates. The notion that block grant funding supports output RAM, rewards efficiency and provides management flexibility without compromise to accountability worked in favour of that type of arrangement. The imperfect market conditions under which education operates, however, suggest that the choice of a demand-side funding model (the voucher system) would not lead to improved efficiency or quality and could affect access to HE for the less advantaged.

Figure 2.5 summaries the conclusions from the literature. It is concluded that RAM has three components namely, transparency/productivity, institutional flexibility and market control. The transparency component dictates how the funds are determined, the flexibility aspect conveys the extent to which the institution at its own discretion is at liberty to redirect the funds as it sees fit and the market control element determines whether it is at the command of the client (student) or the producer (institution). The diagram is also conveying that formulaic funding has two aspects: variable and fixed. An example of fixed formula funding is that which states a percentage of national income for HE. In the variable situation the funds vary with an aspect of the productive process, either enrolment or graduates. Table 2.10 shows the factors that must be examined when considering the transparency/productivity element of the RAM discussion.

Figure 2.5: The RAM Debate Pendulums

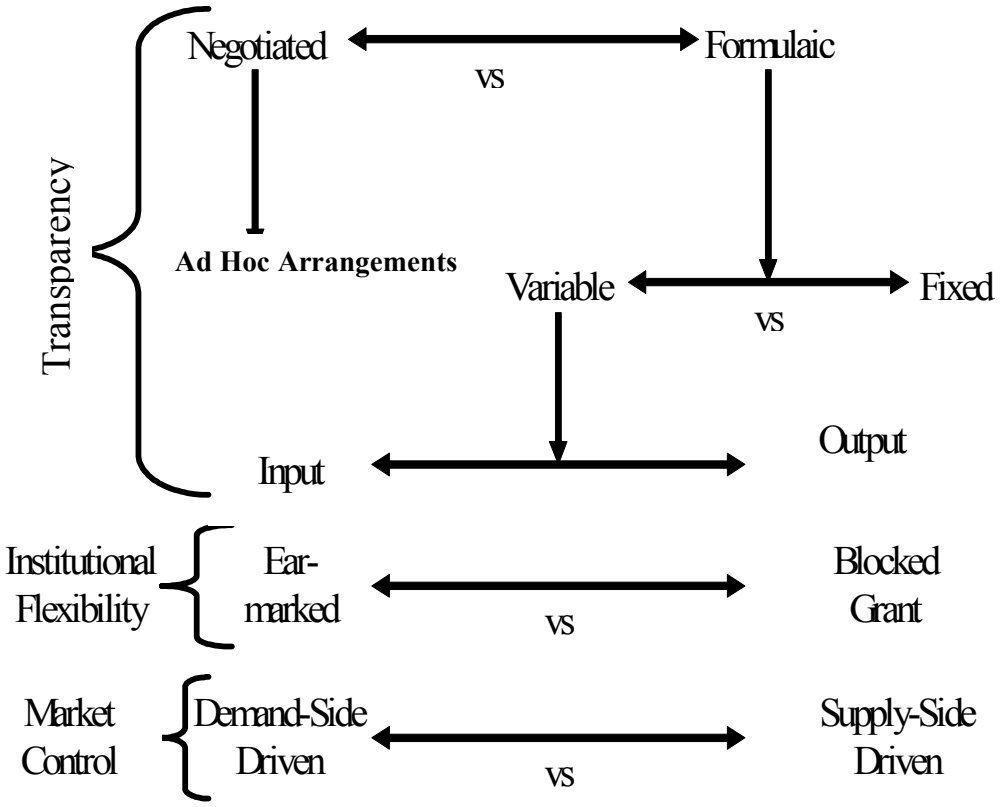


Table 2.10: The Operations Management Matrix for the Choice of a RAM

Type of Funding		Treatment of Accountability	Incentives for Efficiency	Views of Quality	Forms
Negotiated		Politically Based - Upward View • Ex ante control • State control governance system • Political based approach using the agency model • Central planning – lead to massive bureaucracy and political control • Restricts managerial action • Subjectively determined basis • Internal planning hampered by uncertainty and unpredictability	Subjectively Determined	Exceptional View • Quality does not matter	
Formulaic Funding	Input	Politically-Based - Upward View • Ex ante control • State control governance system • Political-based approach using the agency model • Central planning – leads to massive bureaucracy and political control • Unresponsive managerial to students needs • Expenditure based	No Incentive • Open-ended commitment for government if based on enrolment • Increased funding does not signal increased productivity	Exceptional View and Fitness for Purpose • Quality does not matter	• LIB • Programme budgeting • Relative funding
	Output	Market-Based – The New Rights Model • Ex post control • State supervised governance system • Links planning to budgeting • Addresses external accountability and institutional improvement concurrently • Authority decentralised without loss of accountability • Pushes states to identify their priorities and encourage dialogue with institutional leaders • Results in responsive management to students' needs	Incentives for Efficiency • Rewards good and punishes poor performance • Institutions gain from timely completion rates • Stimulates concern with institutional as against individual performance	Value for money view • Rewards quality and penalises poor results • Quality trap where there is no consciousness about quality	• Performance budgeting • Performance funding • Taxi-meter model

CONCLUSIONS

In this chapter the financing options as well as the RAM alternatives were examined. It was determined that the choice of a financing option was dependent on a country's ability to satisfy the preconditions associated with each – Table 2.3. In the case of the RAM, the preferred model was one that was formulaic, based on output factors, and granted to the institution as an unrestricted blocked grant. The choices were based on assessments of the RAM against accountability (governance and management inclusive), efficiency and productivity.

Chapter 3 will outline the methodology that was used to gather the data. A summary of the data will be presented in the chapter and the analysis against the frameworks outlined in this chapter will be done in Chapter 4.

CHAPTER 3
RESEARCH METHODOLOGY

The objectives of the chapter are to

- Outline the approach to the research and explain the reasons for taking such an approach
- Explain how the approach led to the specific strategies of the research
- Outline and explain the techniques that were used to gather and analyse the data.

The section on "Approach to the research" addresses the first objective, "Research Strategy" addresses the second objective and that on "Empirical Stage" addresses the third objective.

APPROACH TO THE RESEARCH

Having identified the research question it was then necessary to develop a framework for conducting the study. In designing the framework the researcher contended with seemingly opposing approaches as e.g. typified by Creswell (2003) and Punch (2000). Creswell (2003) believes that before a framework can be drawn the researcher has to consider the knowledge claim that is being brought to the study, the strategy of inquiry to be used, and the specific methods of collecting and analysing the data. Such considerations, he contends, would enable the researcher to identify whether to use quantitative, qualitative or mixed method approaches in the inquiry. Figure 3.1 illustrates Creswell's view.

Punch on the other hand, does not believe that all social research has to begin from the theoretical perspective and epistemology. Research may proceed from the more pragmatic approach of questions that need answers, or problems that need solutions (Punch, 1998 and 2000). Figure 3.2 illustrates Punch's process.

Figure 3.1: Knowledge Claims, Strategies of Inquiry, and Methods Leading to Approaches and

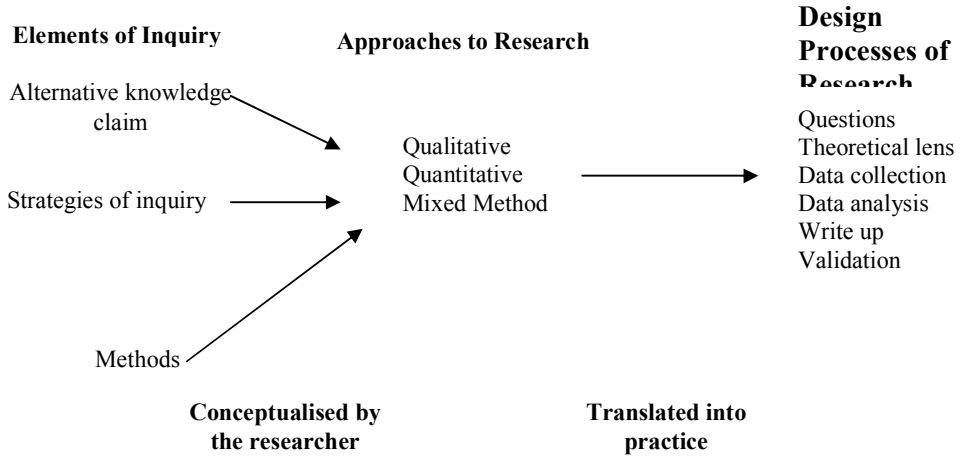
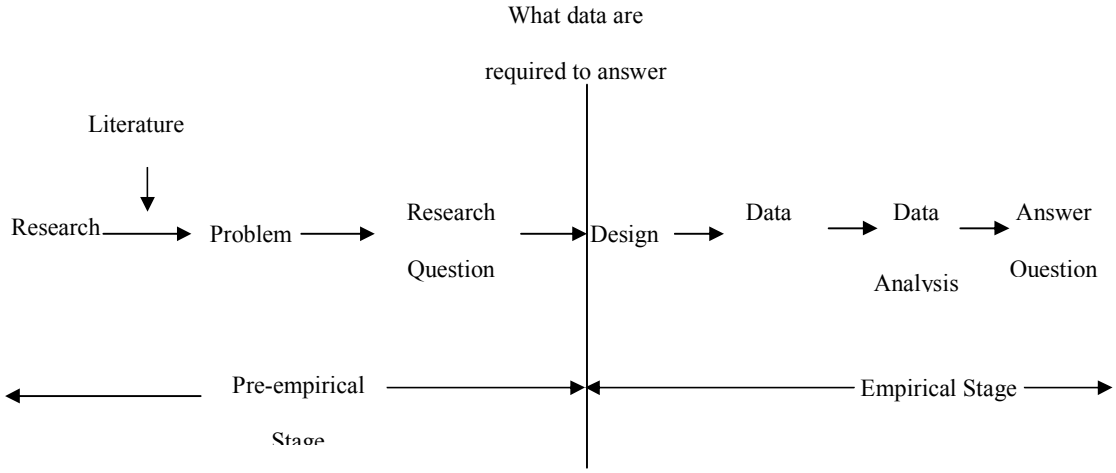


Figure 3.2: Punch (2000) Simplified Model of Research (Without hypotheses)



The foundation of Creswell's view was Crotty (1998) who posited four questions in the designing of a research proposal. These are:

1. What *methods* do we propose to use?
2. What *methodology* governs our choice and use of methods?
3. What *theoretical perspective* lies behind the methodology in question?
4. What *epistemology* informs this theoretical perspective?

Crotty defines the terms used as follows:

Methods: The techniques or procedures used to gather and analyse data related to some research question or hypothesis.

Methodology: The strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.

Theoretical perspective: The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.

Epistemology: The theory of knowledge embedded in the theoretical perspective and thereby in the methodology.

Creswell combines epistemology and theoretical perspective and argues that by stating a knowledge claim a researcher starts a project with certain assumptions about how he would learn and what he would learn during the inquiry. He further categorises the four schools of thought about knowledge claims, which are summarised in Table 3.1.

Table 3.1: Creswell (2003, p 6) Alternative Knowledge Claim Positions

Post-positivism Determination Reductionism Empirical observation and measurement Theory verification	**Constructivism** Understanding Multiple participant meanings Social and historical construction Theory generation
Advocacy/Participatory Political Empowerment issue-oriented Collaborative Change-oriented	**Pragmatism** Consequences of actions Problem-centred Pluralistic Real-world practice oriented

Each knowledge claim and its link with a choice of research approach are hereunder explained. According to Cresswell (2003), the key assumptions of the post-positivists are that knowledge is conjectural and absolute truth can never be found; research is the process of making claims and then refining or abandoning some of them for other claims more strongly warranted; data, evidence and rational considerations shape knowledge; research seeks to develop relevant true statements that can serve to explain the situation that is of concern or that describes the causal relationships of interest; and being objective is an essential aspect of competent inquiry. Consequently Creswell concludes that the post-

positivist's perspective leads to quantitative research methodology, hence its reliance on experiments and surveys.

Constructivism is described as the belief that all knowledge, and therefore all meaningful reality, is contingent upon human practices being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context (Crotty, 1998). From this perspective, the goal of research would be to rely as far as possible on the participants' views of the situation being studied (Creswell, 2003). This perspective and knowledge primarily leads to a qualitative research methodology because of its reliance on the views of the participants. Included would be ethnographies, grounded theory, case studies, phenomenological research and narrative research.

Creswell's third alternate knowledge claim is called an advocacy or participatory form of inquiry, based on the belief that participatory action is recursive or dialectical and is focused on bringing about change in practice; is focused on helping individuals to free themselves from constraints such as those found in media, language, work procedures and relationships of power in educational settlings; is emancipatory as it helps to free people from the constraints of irrational and unjust structures that hinder self-development and determination; and is practical and collaborative because it is completed with others rather than "on" or "to" others. Methodologies associated with the advocacy view of knowledge claims are feminists' perspectives, racialized discourse, critical theory (empowering human beings to transcend the constraints of race, class and gender), queer theory (advocating sexual preference) and disability inquiry (concerned with equal opportunities for the disabled).

For the pragmatist, knowledge claims arise out of action, situations and consequences rather than antecedent conditions. Rossman and Wilson (1985) (cited by Cresswell 2003) are pragmatists who believe that the research problems take precedence over methods in terms of importance. Creswell's (2003) interpretation of Murphy (1990) about the pragmatists' knowledge claims and their links with research methods are that there is no single system of philosophy and reality as researchers can draw liberally from all methodological assumptions; and researchers have freedom of choice, hence they can draw from the various methods, techniques and procedures of research that best meet their needs

and purposes; the world is not an absolute unity, therefore an inquirer can use many approaches to collect and analyse data; and truth is regarded as what works at a particular time and not based on a strict dualism between the mind and a reality completely independent of the mind. The pragmatic investigators can for these reasons, he opines, use both qualitative and quantitative data because they work to provide the best understanding of the research problem. Creswell therefore concludes that pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis in the mixed methods study. Consequently the dependence is on mixed methods research which utilises both quantitative and qualitative data collection and analysis in one study.

Punch (2000), in refuting the role that perspectives play in informing research, makes the points that adopting a particular perspective could possibly influence the discourse and methods of the research and the way the research questions are asked. The issue of perspectives he further argues is applied unevenly across the social sciences and the role and importance of perspective are interpreted differently because at the doctoral level it is of more concern than at the master's level. Also when it comes to assumptions about the social world, and what constitutes proper techniques and topics for inquiring into that world (i.e., paradigm), some areas of social research are heterogeneous and pluralistic while others are homogeneous. Punch further points out that some areas of research are subject to paradigm disputes more than others. Educational research, he states, is heterogeneous and contested while psychological experiments are homogenous and relatively free of debates. As a consequence of this, Punch (1998) concludes that research should begin from the more pragmatic approach of questions that need answers and problems needing solutions. He further makes the point that some research may proceed from some particular perspective (e.g. feminist studies, critical theory studies or a particular post-positivist study). However, when that is the case, the researcher should identify the perspective early and clearly in order to avoid mistaken expectations on the part of the reader.

This author concurs with Punch for the following reasons:

1. Though Creswell used the pragmatic knowledge claim to justify the use of mixed approaches to research, he did not establish that there is a necessary link between a

particular knowledge claim and the choice of methodology. Punch's view that the research question leads the researcher to the choice of a strategy is – in the author's view – more convincing.

2. The unresolved debates between the post-positivists and the constructivists show that there are considerable problems if researchers decide on an epistemology before structuring their study.
3. Allowing the research question to determine the methodology provides a better basis for the claim of objectivity in the research process.

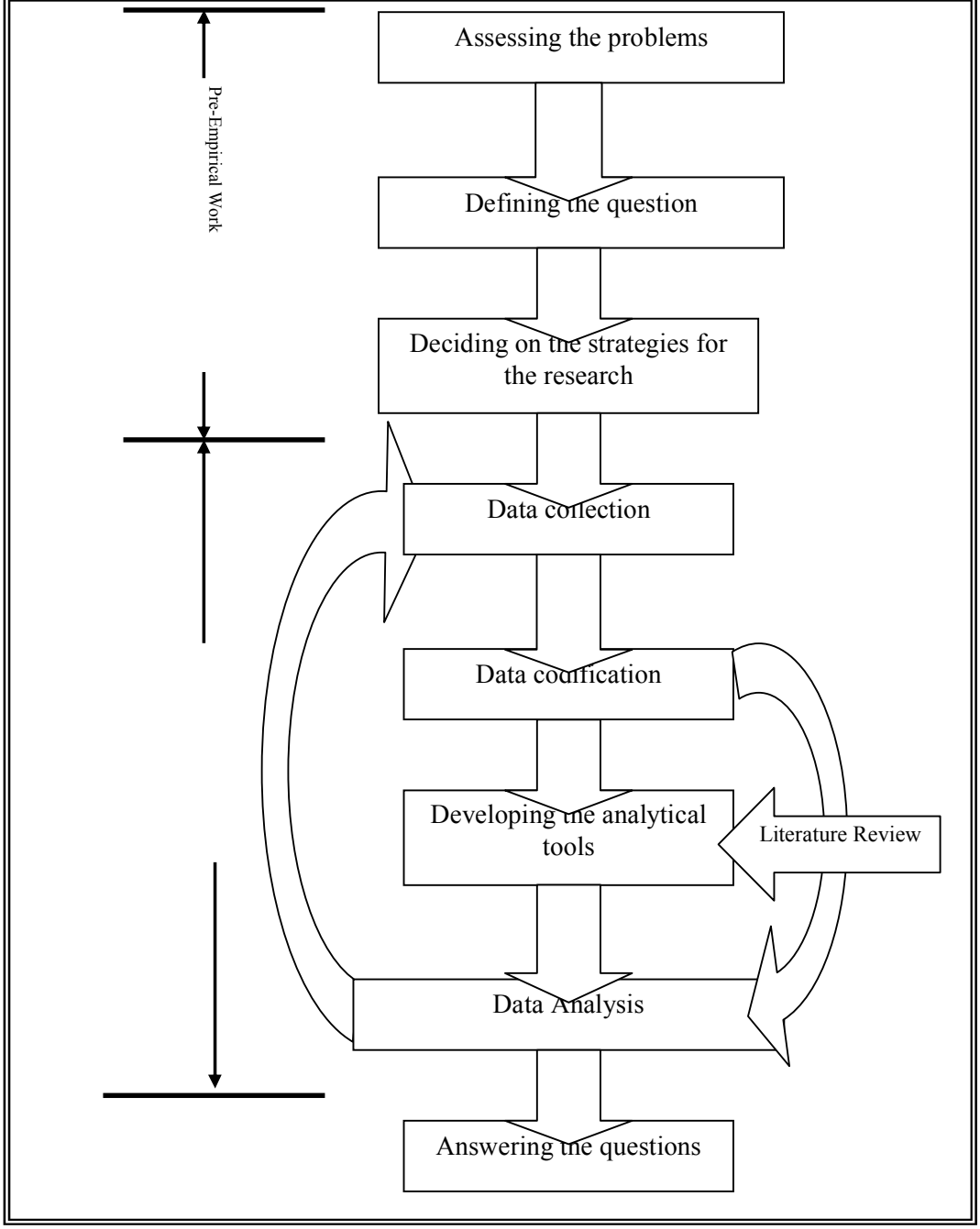
The agreement with Punch was a main reason for the design of the research project as illustrated in Figure 3.3. The first tasks in the pre-empirical stage were to clarify the problem and define the research questions. It was then decided that the type of answer for the questions being asked could best be determined from a qualitative research strategy. The strategies of data collection and analyses were thereafter determined.

It can be seen that the framework used (Figure 3.3) differed from Punch's model (Figure 3.2) in two ways. First, the literature review was not done at the beginning forming a part of defining the problem. Second, the activities in the empirical stage followed a circular rather than a linear pattern. The reasons for these differences will be addressed in the section on the strategy of the research. Figure 3.3 shows that there were eight main tasks to the research. They were:

1. Assessing the research problem
2. Defining the research question
3. Determining the strategies for data collection and analysis
4. Collecting the data
5. Coding the data
6. Developing the tools for the analysis
7. Doing the analysis
8. Formation of theories: answering the question

The figure illustrates that at the analytical stage there were unresolved issues, hence there was a need for further data collection, codification and analysis. In some cases the additional process necessitated the development of new analytical tools and in others there was no such need, hence the path from data codification to analysis on the diagram.

Figure 3.3: The Framework of the Research Project



RESEARCH STRATEGY

As has been set out above, the research question drove the research process. The research question was used to decide the framework and also used to establish the strategy. The main question is: "What are the consequences (intended and unintended) of the different models adopted by Jamaica for the funding of HE?" The context also caused four sub-questions to be raised.

The questions that flowed from the four sub-questions were:

1. What have been the models for funding higher education in Jamaica?
2. What is the assessment of the models that were tried?
3. What other models has the government considered?
4. What influenced the choice of the models that were adopted?
5. How can models be compared?
6. What are the priority issues that would affect the funding model?
7. Is there a model of best practice for financing higher education operating in the world?
8. Are there governing principles for government funding of higher education?

These questions raised the issue of the type of data that would be needed to answer them.

Main Strategy

Punch (1998) points out that in order to answer the "question" one has to turn to the data, which would connect content to method. Data are the evidence or empirical material. Quantitative data are in the form of numbers, from counting, scaling or both. The main and sub-questions posed could not have been answered by measurement, and hence the general strategy for the research was qualitative. Patton (1990) identifies five types of research questions for which qualitative strategy fits (Mertens 1998, pp.162 -163):

1. The focus of the research has to be on the process, implementation, or development of a program or its participants.
2. The program emphasises individualised outcomes.
3. Detailed, in-depth information would be needed about certain clients or programs.
4. The focus is on diversity among, idiosyncrasies of and unique qualities exhibited by individuals.

5. The intent has to be to understand the program theory – that is, the staff members' (and participants') belief as to the nature of the problem they are addressing and how their actions will lead to desired outcomes.

The main research question and sub-questions do fit the types mentioned by Patton. However, while Patton addressed programs the research dealt with models. Qualitative data or "empirical information about the world, not in the form of numbers" (Punch 1998 p.60) was deemed best to answer the questions posed. Qualitative empirical material, include interview transcripts, recordings and notes, observational records and notes, documents and the products and records of material culture, audio-visual diary information, and personal experience materials (such as artefacts, journals, and diaries) (Denzin and Lincoln cited ibid). It was determined that the questions could be answered with the use of qualitative data from interview and documentary analyses. The nature of these will be addressed in the section dealing with the empirical methods of the research.

Sub-Strategy

In addition to the main strategy, there were a number of sub-strategies associated with qualitative research. Punch (2000) points to a two-fold strategy. He sees the need to describe the planned strategy procedurally as well as generically. For him generically means identifying the strategy in general terms, e.g., case study, ethnography, survey or quasi-experiment; and procedurally means how the researcher would execute the general strategy. Adding Punch's idea to the main strategy, the research strategy was threefold:

1. Main – meaning the broad strategy of quantitative, qualitative or mixed.
2. Sub-strategies – meaning the specific type of quantitative, qualitative or mixed.
3. Procedural – meaning the strategies that were used to collect and analyse the data.

Mertens (1998) points to twenty-six types of sub-strategies in qualitative research by Tesch (1990) and of these, emphasized seven:

1. Ethnographic research – a method designed to describe and analyse practices and beliefs of cultures and communities (Tesch 1990).
2. Case study – "a method for learning about a complex instance, based on a comprehensive understanding of that instance obtained by extensive descriptions

and analysis of that instance taken as a whole and in its context" (U.S. General Accounting Office, 1990, p.14).

3. Phenomenological research – the study of the way in which members of a group or community interpret the world and life around them (Holstein and Gubrium, 1994).
4. Grounded theory – "a general methodology for developing theory that is grounded in data systematically gathered and analysed" (Strauss and Corbin, 1994 p.273)
5. Participative inquiry – required the participation of all the people in the research process either by not explicitly addressing power relations (co-operative inquiry) or by the recognition of power issues and a goal of transforming society (participatory action research – PAR)
6. Clinical research – the investigation of physical, behavioural, cultural, historical, social, emotional, and spiritual ramification of what is going on with the body, what is happening with a person's life and who has what power (Miller and Crabtree, 1994, p. 342).
7. Focus groups – group interviews that rely, not on a question and answer format of interview, but on the interaction within the group (Morgan, 1988).

In choosing the sub-strategy there was a return to the research question. The question led to the purpose, which was to investigate the consequences of policies. Of Mertens' (1998) seven types of qualitative research outlined above, only two could possibly have been used to address the research question and the purpose of the study. These were case study and grounded theory research. The others were ruled out because they had to do with the study of culture or people. As such, they did not fit the nature of the inquiry.

Case study is defined by Theodorson and Theodorson (1969) (cited by Punch 1998) as:

> *A method of studying social phenomena through the thorough analysis of an individual case. The case may be a person, a group, an episode, a process, a community, a society, or any other unit of social life. All data relevant to the case are gathered, and all available data are organized in terms of the case. The case study method gives a unitary character to the data being studied by interrelating a variety of facts to a single case. It also provides an opportunity for the intensive analysis of many specific details that are often overlooked with other methods*.

From the above Punch (1998) draws four characteristics of a case study:

1. It is a bounded system.
2. It is a case of something – the unit of analysis must be determined.

3. There is an explicit attempt to preserve the wholeness, unity and integrity of the case.
4. Multiple sources of data and multiple data collection methods are likely to be used, typically in a naturalistic setting.

In addition to the above Sarantokos (1988, p. 192) points out that a case study studies the whole unit in its totality, it is a research of a single unit and perceives the respondent as an expert and not just a source of data.

The aim was to explore the effects of government funding of higher education in Jamaica, assess the consequences and suggest changes to the system. In order to carry out the task it was determined that it would be difficult to be limited by the confines that a case study would place on the project. This was because the boundary limitation was deemed too restrictive. It was thought that it would have been better to allow the freedom to go where the investigation led. The second problem was to determine what was the case or "what was it a case of". Such would be necessary to determine the unit of analysis. The third issue was the unitary nature of a case study, which would have suggested that the study be limited to the funding of one university. This was not the intention and to ensure that there was no deviation the chosen strategy was grounded theory, although it should be mentioned that the two are not necessarily exclude each other. Mertens (1998) points out that the defining characteristic of grounded theory is that theoretical propositions are not stated at the outset of the study but emerge out of the data. The key features are:

1. The researcher needs to constantly interact with the data.
2. Use of theoretical sampling.
3. Use theoretical, systematic coding procedures. Conceptualise how the substantive codes relate to each other as hypotheses to be integrated into a theory.
4. The researcher needs to ask questions of the data that allow him to depict the complexity, variation, and nature of the relationships between variables in the study.

Punch (1998) stated that:

> Grounded theory is best defined as a research strategy whose purpose is to generate theory from data. 'Grounded' means that the theory will be generated on the basis of data; the theory will therefore be grounded in data. "Theory" means that the objective

of collecting and analysing the research data is to generate theory. The essential idea in grounded theory is that theory will be developed inductively from data.

In exploring the model for financing HE in Jamaica, the research drew from several sources. The data were analysed and inferences drawn from them. Eventually theories emerged and led to recommendations. The theories are summarised in the section on "Theoretical Underpinning" in chapter 6. Grounded theory research is both a strategy and a technique for doing research. As a strategy it allows the researcher to "derive a general, abstract theory of a process, action, or interaction grounded in the views of participants" in the study (Creswell, 2003, p. 14). As a technique it dictates a process of collecting and analysing the data in order to arrive at a theory.

Consistent with grounded theory the research did not start with any hypotheses, as there were no predictions. Punch (2000, pp. 30–31) advises the use of two questions to determine whether hypotheses should be used or not. Those questions were

1. Can I predict (in advance of the empirical research) what I am likely to find?
2. If so, is the basis for the prediction rational, a set of propositions, a "theory" from which the hypotheses follow, and which "explains" the hypotheses?

The answer to the first question was negative and hence the decision. Grounded theory research has as its objective the generation of theory grounded in the data of the research. The research was not one of theory verification; hence it started with an open mind. There was therefore no need for an upfront theory or formulation of a hypothesis before the empirical work. This was also consistent with the inductive logic technique as outlined by Creswell (2003) in Figure 4. Punch (2000) also stated that, "a theory generation study aims to generate or develop a theory to explain empirical phenomena or findings. Such a study typically starts with questions, moves to data and ends with a theory."

EMPIRICAL STAGE

Having settled on the theoretical approaches to the research as described, the research design was then concluded. Figure 3.3 outlines the framework of the project. The next step was that of segmenting the activities. Three main activities were planned, the objectives of which are listed hereunder.

ACTIVITY 1 - Review of Jamaica's Funding Policies

Objectives

(i) To identify the HE funding strategies tried in the past.

(ii) To identify the problems encountered with each strategy.

(iii) To assess the current HE funding strategy.

(iv) To ascertain the reasons for the various policies adopted by Jamaica.

ACTIVITY 2 - Review of Funding Methodologies around the World

Objectives

i. To identify and categorise the different methodologies.

ii. To examine the benefits and challenges associated with each.

iii. To ascertain the factors that influences the funding policies.

iv. To investigate the possible link between funding strategy and Economic development.

v. To investigate the link between government priorities and their funding policies.

ACTIVITY 3 – Defining the Criteria for the Jamaican Model

Objectives:

i. To determine some criteria from the Jamaican experience.

ii. To suggest some criteria for the Jamaican model from the experience of other countries.

iii. To ascertain the current and future priorities of the Jamaican Government for HE.

iv. To establish the links between funding strategies, government priorities and the criteria.

v. To identify the issues relating to the management of HEIs and how funding policies can assist in good management.

vi. To identify the statutory, legal and other obligations as they relate to the management and funding of HEIs.

vii. To establish the economic issues relating to the financing of HE.

Data Collection

Interviews and documents were chosen as the primary sources of data. These were chosen as the best methods to answer the questions that were posed. The interviews were conducted first. This method is considered flexible and adaptable and was a most

convenient way of gathering information from the experts, policy makers and opinion makers. A list was compiled of possible interviewees and these people were sent letters explaining the nature of the research along with a list of the questions. The initial list consisted of:

- CEO, Tertiary Unit Ministry of Education, Youth and Culture
- One past principal of HEI, Alfred Sangster.
- Current principals from the UWI and UTech
- The Minister of Education
- The Minister of Finance
- A Permanent Secretary
- The Opposition Spokesman on Education
- Opinion makers

The rationales for the list were as follows:

- ✓ **Government officials** – These could offer information and ideas about Governments policies, priorities, current practice, massification, widening participation and the country's ability to fund HE vis-à-vis its economic development.
- ✓ **Senior personnel in HE in Jamaica:** Being directly affected, these could offer information about the HEIs' experience with the current financing model, and offer ideas about governing principles.
- ✓ **Opinion makers in Jamaica:** There were some newspaper columnists who wrote regularly on the issue and it was thought that they could inform the research.
- ✓ **Past and presents Students of HE:** Students can give valuable information based on their own experiences. They can provide information about their experience in paying their way as well as the value they have had since leaving the system.
- ✓ **Representatives of international organisations that are involved in HE:** The World Bank and UNESCO are two such organisations that are heavily involved in assisting the governments on the issue of financing HE.

Follow-up calls were made to the offices of all persons. Some persons acknowledged the correspondence and declined the interview and a few did not respond to the

correspondence or return telephone calls. Interviews were granted by the following people:

- The past president of UTech, Hon. Alfred Sangster, O.J.
- The current president of UTech, Dr. Rae Davis. He was also the Chairman of the Prime Minister's Task Force on the Reform of Education in Jamaica.
- The Bursar of the Mona Campus of the UWI, Mrs. Elaine Robinson.
- The Minister of Education, the Hon. Maxine Henry-Wilson
- The Minister of Finance, the Hon. Dr. Omar Davies
- The Assistant Chief Education Officer in Charge of Tertiary Education, Mr. Philbert Dyll

For supplemental information and further clarification short interviews of follow-up questions were done with:

- Ms. Patricia Harrison, Manager Finance at UWI
- Ms. Jennifer Cheesman, Planning Officer at UWI

One of Flick's (2002) semi-structured interview methods, namely the semi-standardized interview was used. Robson defines the semi-structured interview as one where the interviewer has worked out a set of questions in advance, but was free to modify the order based upon perception of what seemed most appropriate in the context of the conversation. The semi-standardized form is suggested by Scheele and Groeben (1998) (cited ibid.) in their method for reconstructing subjective theories. Subjective theories mean "that the interviewee has a complex stock of knowledge about the topic under study" (ibid). From the list of people interviewed it can be seen that use was made of people who by their work and interest had acquired a stock of knowledge about government funding of higher education. The semi-standardized interview also allowed for follow up questions when gaps were identified and clarification was necessary. The method was also chosen because the procedure involved coincided with the circular model of the research process. The questions posed were in line with the specific objectives identified above. The questions posed in relation to the objectives of Activity 1, the review of the Jamaican funding models, were

1. What were the Higher Education funding policies used by the Government of Jamaica prior to 1990?
2. How were the mechanisms of these policies worked out and implemented?

3. What problems were encountered?
4. Can you identify any benefits of the policies?
5. Describe the current policy of government funding of Higher Education in Jamaica?
6. What is your assessment of this policy?
7. What are the problems experienced with the current policy?
8. How are the problems being dealt with?
9. What are the benefits being derived from the current policy?
10. Since salary is linked to the current funding model, what do you think of the differing salary levels negotiated by government for the HEIs in Jamaica?
11. How have the economic problems being experienced by Jamaica influenced its funding policies?
12. What do you think are the reasons for Jamaica to have adopting its current policies?

In relation to Activity 3, "Defining the Criteria for the Jamaican Model," the questions were"

1. What are/should be the expectations of the Jamaican government in relation to HE?
2. How do you see the HEIs fulfilling these expectations?
3. How do you see government funding influencing these expectations?
4. What factors should the government use in determining a funding policy for HEIs in Jamaica?
5. How are the following issues relating to the management and funding of HEIs all over the world pertinent to HEIs in Jamaica?
    - Cost
    - Productivity
    - Quality
    - Equity
    - Efficiency
    - Access
    - Entrepreneurship
    - GATS
    - Governance
    - Social Responsibility

6. How can a Jamaican government-funding model influence the above issues?

The results of the interviews were transcribed and the transcripts were sent to the interviewees, requesting their reviews and comments. They were also informed that in the event they did not respond it would be assumed that they were in agreement with the contents. All except the Minister of Finance and the Bursar of the UWI made revisions. The revisions were not substantive as they were mainly typographical or phraseology changes.

The semi-standardized interview as described by Flick (2002) also provided the opportunity for testing validity in the research process. Creswell and Miller (2000) describe "member checking" as one of nine methods for testing validity. Member checking "consists of taking data and interpretations back to the participants in the study so that they can confirm the credibility of the information and narrative account." The process, described above, of interviewing, transcribing, and allowing the interviewee to review the information, therefore, provided the function of data collection and validation.

The researcher also was able to travel to the United Kingdom, the Czech Republic, Germany and the Netherlands to interview experts about the funding of HE. The interviews were aimed at clarifying and validating some of the information gathered from documents about the international practice of financing HE. The purpose of these interviews was opposite to those conducted nationally as the latter served to validate the information from the document search. The list of persons interviewed in these countries is contained in Appendix XVIII.

Documentary analysis was the main method of data collection for this study for the following reasons. First, the themes and ideas garnered from the interviews were able to be tested against those found in the documents and this provided the basis for triangulation. Second, the research questions signalled that much of the material had to do with historical information and past documents provided the best means of accuracy. Third, there have been public debates in Jamaica on the matter and the study re-examined the issues raised in light of the fact that a decision has not yet been taken to change the current practice. Fourth, since many countries had considered the issue of the social funding of higher education and had decided on a model, it was considered useful to examine their

deliberations, compare them across countries and consider relevance to the Jamaican context. Fifth, because of the wide geographic area the study intended to cover, it was deemed too expensive to travel to all the relevant countries to interview people. The researcher was, however, able to visit four countries from which additional documents were acquired and the opportunity provided for validating some of the documentary information with interviews.

The interviews provided the bases of the search for the relevant documents. The analysis of the interviews provided several themes which were used as search ideas. Materials were acquired from the libraries of the Ministry of Finance, UWI and UTech, the archives of the UWI and UTech, and office correspondence from UTech. Documents were also acquired from the World Bank, UNESCO and several organisations dealing with HE financing. Most of the documents addressing the international practice were obtained from the website of the organisations, electronic journals and databases and directly through personal contacts.

Sampling

With the issue of sampling, use was made of Flick's (2002 pp. 61-62) table of sampling decisions - Table 3.2. It was realised that the project had to make use of all the sampling methods in the table that related to the stages in the research.

Table 3.2 Sampling Decisions in the Research Process

Stage in research	Sampling methods
While collecting data	Case sampling
	Sampling groups of cases
While interpreting data	Material sampling
	Sampling within the material
While presenting the findings	Presentational sampling

Case sampling is the decision about which persons to interview and sampling groups of cases was about the decision about which groups such persons should be taken. These decisions were taken during the data collection period. See section on data collection. During the analysis of the data it was necessary to decide on which aspect of the interviews should be further interpreted (material sampling) and which part of the text should be should be selected for interpretation in general or for particular detailed interpretation (sampling within the material). Finally decisions had to be made about the aspects of the material that would best illustrate the findings. Random sampling and complete collection

techniques were neither relevant nor possible. The nature of the research and the intention to cover as wide a geographic area as necessary did not allow for either.

In making the sampling decisions at the various stages, a technique consistent with grounded theory research, called theoretical sampling was chosen. Glaser and Strauss (1967) according to Flick (2002, p. 64) defines theoretical sampling as "The process of data collection for generating theory whereby the analyst jointly collects codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. This process of data collection is controlled by the emerging theory." In the theoretical sampling process Flick (2002) pointed out were two important questions to be answered. These were:

1. What group or sub-groups should data be collected from next? The answer should be based on some theoretical criteria.
2. When should the researcher stop integrating further cases? This should be when saturation is achieved.

The use of the theoretical sampling technique resulted in several circles of data collection, data analysis and decisions about the need and source of more data. The process was also guided by the questions.

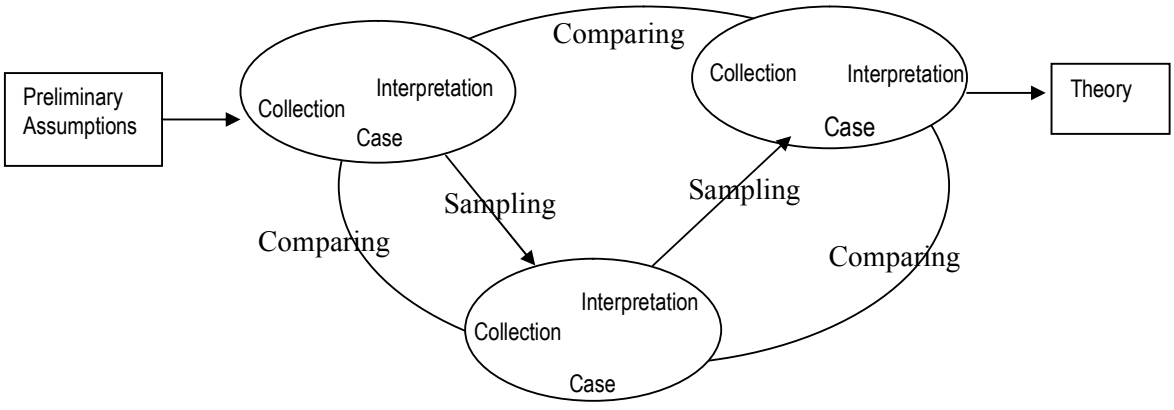


Figure 3.4 Flick (2002, p. 44) Circular Model of the Research Process

Data analysis

In the analytical process, the research made use of the inductive logic technique (Figure 3.5) which was incorporated in the circular model of the research process (Figure 3.3). The steps outlined in Figure 3.5 were followed closely. Use was also made of Sarantakos'

(1998, p. 202) ten main steps of grounded theory procedures, which also serve to guide the detailed of Flick (Figure 3.4). These were:

1. Identifying the indicators in the research topic.
2. Studying the indicators and comparing them with each other.
3. Coding the indicators, looking for answers and formulating hypotheses.
4. Categorising similar indicators as a class.
5. Naming the class and perceiving it as a coded category, which reflects the indicators' similarities, and the smallest common denominator.
6. Comparing the indicators with concepts and with other indicators; this helps to refine them and relate them optimally to the data.
7. Working through more attributes of the categories, refining them and getting additional information until the codes are tested and saturated. Saturation is when no more information can be gained.
8. Developing and saturating more categories through the process of constant comparisons.
9. Including in the theory, concepts and their attributes developed in that way.
10. Further testing, contrasting and comparing of theories and perhaps refining and changing them.

The circular process (Figure 3.4) was chosen not only because it is associated with grounded theory research but also as Flick (2002, p. 43) points out:

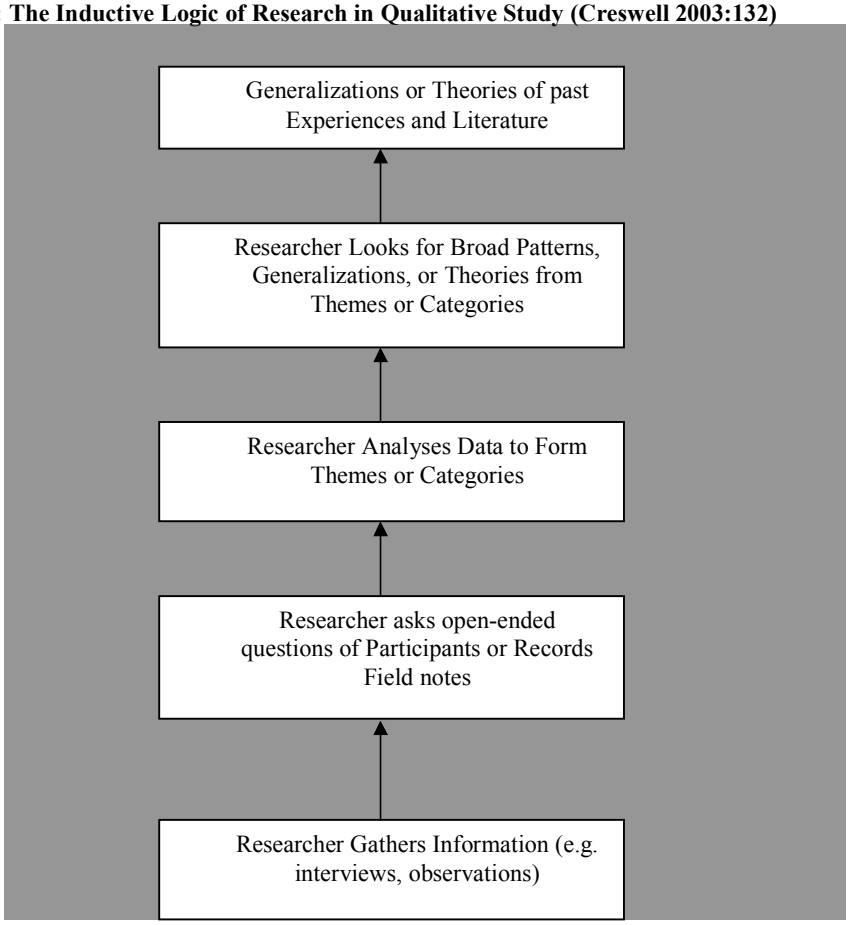
> It forces the researcher to permanently reflect on the whole research process and on particular steps in the light of the other steps … The close (also temporal) link between collecting and interpreting data on the one hand and the selecting of empirical material on the other, unlike in the traditional linear method of proceeding, allows the researcher not only to ask the following question repeatedly but also to answer it: how far do the methods, categories and theories that are used do justice to the subject and the data?

The second difference with the Punch Model (Figure 3.2) was therefore explained by the above. Flick (2002, p. 44) (Figure 3.4) detailed the activities in the empirical stage of

Figure 3.3. The process of data collection, data analysis and interpretation (Figure 2.3) would have to go through several cycles (Figure 3.4) before a satisfactory theory was developed.

From the literature review analytical models were developed and used as tools to further examine the data. The conditions precedent chart and the related decision tree were used to assess the financing methods used by Jamaica and the operations management matrix and the RAM debate pendulum were used to examine the methods of allocating resources to HEI in Jamaica. Use was also made of the Orr's (2005) trajectories and congruence of a coordination framework to examine the relationship between the RAM and the quality assurance mechanism of the country. The data analysis therefore was done by the systems and procedures of grounded theory and also by other tools developed or identified during the course of the research.

Figure 3.5: The Inductive Logic of Research in Qualitative Study (Creswell 2003:132)



Testing for reliability and validity

An important element of the research was to ensure reliability and validity. A concern of the researcher was to ensure that the information gathered from the documents and interviews was reliable. Reliability is the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same conditions with the same subjects (Trochim 2002). "Stability over time can be directly assessed, under certain circumstances, by administrations of the same instrument (or by parallel forms of the instruments) at two points in time" (Punch, 1998). That was the test/retest method for reliability which was thought to be problematic for the project, as it would require the use of the same process on separate occasions. The semi-structured interview method was not a good candidate for reliability testing. Bell's (1999) advice was therefore taken that such checking mechanism is not necessary unless one was attempting to produce a test or scale. She further recommends that the check for reliability should come at the stage of the wording of the questions and the piloting of the instrument. As a result, the internal consistency method as outlined by Trochim (2002b) was used. This was the method where reliability was estimated by grouping questions that measure the same concept in the interviews. The manner in which the semi-standardized interview was conducted was also a form of test of reliability as it allowed for follow-up and clarification.

Validity as defined by Cook and Campbell (1979) (cited by Cresswell and Miller 2000) is the "best available approximation to the truth or falsity of a given inference, proposition or conclusion." There was a concern about the validity of the information garnered from the interviews. Creswell and Miller (2000) state that two perspectives govern the validity procedure: the lens the researcher chooses to validate his studies and the researcher's paradigm assumption. As a result, they believe that the use of validity procedures should be accompanied with the acknowledgment of the lens being employed in the study and the paradigm assumptions of the researchers. This chapter has already pointed out that the research did not begin with a set of paradigm assumptions but was being led by the research problem and questions. For this reason, the choice of validity instruments was dependent on their practical use to the study. Instead of reflecting on the lens and the epistemological perspective, the research asked one simple question: "Of the existing validity procedures, which were the most practical for the study?" The answers were triangulation and member checking.

Triangulation is explained in the foregoing section and member checking was discussed in the section on interviews. The inferences drawn from the interviews were validated against each other as well as the documents – this was triangulation. It was also pointed out that the interviewees were sent transcripts of the interviews and asked to review them to ensure the correctness. This was the validity testing method called member checking.

Triangulation

The use of two, possibly three methods of data collection (documentary analysis, interviews and or questionnaires) is called data triangulation. Sarantakos (1988) points out that triangulation allows the researcher to:

- Obtain a variety of information on the same issue
- Use the strengths of each method to overcome the deficiencies of the other
- Achieve a higher degree of validity and reliability
- Overcome the deficiency of single-method studies

Flick (2002) points out that even though triangulation started as a strategy for validating results, the focus has shifted towards enriching and completing knowledge and towards transgressing the epistemological potentials of the individual method.

For all the above reasons, triangulation was considered important in the study. There was a thorough analysis of the interviews followed by analyses of the documents. The documentary analysis sought further knowledge as well as tested some of the ideas expressed in the interviews.

Use of Literature Review

It is worthwhile to return to Figure 3.3 to explain the other difference with Punch's model. The literature review was done during the empirical stage. The literature review, however, could have been treated in two other ways in the project. Creswell (2003) summarises three ways in Table 3.3.

Table 3.3 Using Literature in a Qualitative Study

Use of the Literature	Criteria	Examples of Suitable Types of Studies
The literature is used to "Frame" the problem in the introduction or the study.	There must be some literature available	Typically used in all qualitative studies, regardless of type.
The literature is presented in a separate section as a "review of the literature"	An approach often acceptable to an audience most familiar with the traditional, positivist approach to literature review	This approach is used with those studies employing a strong theory and literature background at the beginning of a study, such as ethnographies and critical theory studies.
The literature is presented in the study at the end; it becomes a basis for comparing and contrasting findings of the qualitative study.	This approach is most suitable for the "inductive" process of qualitative research; the literature does not guide and direct the study but becomes an aid once patterns or categories have been identified.	This approach is used in all types of qualitative designs, but it is most popular with grounded theory, where one contrasts and compares his or her theory with other theories found in the literature.

Source: Creswell (2003, p.31)

The literature review served three purposes:

1. Identifying what already existed in the literature about the financing of HE
2. Providing a source of secondary data to answer the question of what options were available to the Jamaican government for the financing of HE
3. Providing the basis for comparing and contrasting the findings

The literature review being done at the end of the study is consistent with the use of the inductive logic process. Chapter 5 reveals that the frameworks developed from the literature review (Chapter 2) were used to compare and contrast the findings of the research (Chapter 4). Punch (1998) states that since one rationale for doing grounded theory study is to ascertain a satisfactory theory on the topic or sufficient understanding of the topic then the researcher could not do much theorising of the issue beforehand. The results showed that the policies adopted did not so much emerge from a theoretical perspective but rather evolved in reaction to the political environment and the financial difficulties of the country. This was a reason for choosing the inductive logic framework for the research.

Limitations and delimitations

The limitations experienced had to do with the availability of persons to be interviewed and access to documents. It was pointed out earlier that from the proposed schedule of interviews some persons did not respond or indicated that they were unavailable. The project therefore depended heavily on documentary records as its main source. The archive at the UWI was a rich source of information and it was able to fill the gap where the interviews could not. The researcher was also allowed free access to the internal files of the UTech.

The study was confined to HEIs. The definition for HE in Jamaica included universities and programmes of studies terminating in a degree. It was recognised that the UWI has been a HEI since its inception. CAST entered HE in a limited way when it started offering degrees in 1986. It fully became an HEI in 1995 when it was granted official university status and became UTech. The scope of the study was also limited to those HEI that received social funding. For those reasons the study concentrated on the UWI and UTech which were the only two institutions that satisfied the criteria of HEI and government funding in Jamaica.

Ethics

The main ethical issue of the research was the researchers own involvement in one of the HEIs. The researcher, therefore, had to be conscious of the connection and guard against biases and pre-conceived notions. In order to mitigate the circumstances the following precautions were taken

1. Constant reminders of possible conflicts of interest
2. The use of the validation and reliability methods before inclusion in the research
3. A commitment to reflect the truth regardless of who it affected

CONCLUSION

By taking the pragmatic approach to the study this researcher focused on the problem of HE funding in Jamaica. A pragmatic approach is different from a pragmatic knowledge claim. The latter determines, a priori, the methods and methodology of the research and the former makes no such attempt but allows these to unfold as the project progresses. The approach led to the research question of "What are the consequences (intended and unintended) of the different models adopted by Jamaica for the financing of HE?" The context in which the financing of HE took place also gave rise to four sub-questions for the research about the consequences of an unchanged model for a system that had shifted from a single HE provider to diverse providers, consequences of financing both a regional as well as a national system, the philosophical underpinnings of the RAM and the models available for financing HE. The nature of the questions and the data necessary to answer the questions led in turn to the choice of the qualitative research strategy. Since there are many different strategies in the field of qualitative research, more focus was placed on the research question and the purpose of the study. This led to the choosing of the grounded theory as the sub-strategy. Grounded theory research is not only a strategy but also provides a technique for doing research. The technique involved the theoretical sampling strategy and the methods of capturing and analysing the data repeatedly until satisfactory conclusions were reached. The grounded theory research technique also requires an interaction with the data to eventually derive a substantive theory. The substantive theory was used to answer questions posed for the financing of HE in Jamaica.

Chapter 4 will present a summary of the findings resulting from the use of the grounded theory approach to data analysis. The results reveal the answers to the main question about the consequences of the policies that were adopted by the country.

CHAPTER 4
JAMAICAN HIGHER EDUCATION FINANCING POLICIES

This chapter presents the findings, which resulted from several stages of coding and analyses of the interviews and documents using the grounded theory method of research. 1962 was chosen as the base year because that was when Jamaica gained its independence from Britain and took charge of its own destiny, though it inherited structures, systems and processes that could not be changed immediately. This research is about the financing of HE; however, because of the manner in which the financing policies evolved in Jamaica, references will be made to the other types of institutions within the education sector. The four policies adapted by the Jamaican government are presented under the following headings:

- features of the financing policy
- Resource Allocation Method (RAM) used to harness and channel the funds
- consequences of the policies and the RAM

THE MIXED SYSTEM 1962-1973

Under the mixed system there was no uniformity in financing policy or RAM of education. There was basically a continuation of the systems inherited from the colonial era. The features, which were not sector specific, are described hereunder.

Features of the Mixed System

Secondary Education There were two ways of financing the secondary education school system during the period 1962 to 1973. The technical high schools and the junior secondary schools (owned and operated by the government) were treated similarly to the primary schools and were funded totally from the national budget. Students were not required to pay tuition fees. Some secondary schools, referred to as traditional high schools, were owned and operated by the Church and Trusts but supported by the

government. These were operated under a system called "grant-aid" where the government awarded tuition scholarships to students who were successful in an examination. (See Appendix III for full explanation).

Teacher Training This category was also regarded as a government priority and was also fully funded from the national budget. In addition to the support given to the institutions, grants were awarded to trainees to cover living expenses and accommodation costs. (See Appendix III for details).

Technical and Further Education The College of Arts, Science and Technology (CAST) and the Jamaica School of Agriculture (JSA) were during that period, classified as technical and further education institutions and financing was a joint effort of the government and the students. The government awarded grants to cover recurrent and capital expenditure and the institutions were allowed to charge fees to supplement the grants. During the period 1962-1973 the government of Jamaica contributed 75% of the total income of CAST, and students' fees accounted for 13%. In 1971 tuition fees at CAST was $50 per annum for full time students, $6 per subject hour for day release and evening students and boarding cost was $322 per annum per student. The Board of Management of the institution was responsible for setting the fees. Government also granted scholarships and grant-in-aide to needy students. These were intended to cover tuition, boarding, and other education related expenses for those students. In 1971 the following new provisions for scholarships were made in the national budget:

- 12 persons annually @$80 per annum for CAST
- 24 persons annually @ $120 per annum for JSA

It was noted that, in that year there were 43 Scholarships at CAST and 72 at JSA.

Higher Education During the period, the UWI was the only provider of HE for Jamaicans. Those who did not attend the UWI journeyed to Britain and other countries for that level of education. The Hon. Donald Sangster, Deputy Prime Minister and Minister of Finance, outlined the arrangements for funding that regional HEI, to the House of Parliament on 3rd September 1963, in Ministry Paper No. 351/01. See appendix IV for full text.

The main feature was that the governments of the region would fund the only HEI (UWI). The Minister of Finance reminded Parliament that at the Common Services Conference held in Trinidad, July 10-18, 1962, "The Governments of Jamaica, Trinidad and Tobago, the Windward and Leeward Islands, British Honduras and the British Virgin Islands agreed to continue support of the University on a regional basis for at least three triennia – i.e. from 1st August, 1963 to 31st July 1972." Table 4.1 shows that the contributing governments were largely responsible for the income of the institution. The average income from contributing governments was 67% of total income. Contributions ranged from a minimum of 60% in 1966 to a maximum of 74% in 1973.

Table 4.1 Income Analysis of the UWI 1962-1973

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Ave.
Govt. Cont/Total Income	71%	63%	60%	63%	60%	63%	64%	70%	71%	74%	67%
Other Grants/Total Income	5%	5%	5%	6%	5%	4%	3%	3%	2%	1%	5%
Hosp./Total Income	5%	4%	4%	4%	3%	3%	3%	3%	3%	3%	4%
Students Fees/Total Income	4%	4%	4%	4%	3%	4%	4%	4%	4%	4%	4%
Dept. Funds/Total Income	15%	22%	26%	23%	27%	24%	24%	19%	18%	16%	19%
Common Service Fees/TI	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Investment Return/Total Income	1%	1%	1%	1%	2%	2%	2%	2%	1%	1%	1%
Other Income/Total Income	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

In 1965 there was a doubling of the resources to fund departmental projects and research. This accounted for the sharp drop in the portion that government contributed in that year. In 1971 there were salary increases and also the establishment of the Norman Manley Law School both of which incurred additional costs, which were absorbed by the participating governments. This accounted for the increased governments' contribution since 1971.

The second feature was that students made a small contribution towards recurrent cost**.** Dr. Rae Davis, President of the University of Technology, Jamaica, in the interview stated, "Since the establishment of the University of the West Indies (UWI) in 1948 Higher Education was virtually free, there was a small tuition fee"(November 2003). The Hon. Donald Sangster, Minister of Education 1963, in his submission to Parliament pointed out that the University Grants Committee (UGC) had decided that as at October 1963 the charges for tuition and examination were £350 per person per annum (p.p.a) for medical students, £250 p.p.a. for engineering students and £100 p.p.a for all other categories of

students. Table 4.1 shows that students' contribution to total income averaged only 4% p.a. for the period.

Support was also available for the neediest students in the form of scholarships and bursaries. The Estimates of Expenditure for 1971, for example, had provisions as follows:

- 250 bursaries ranging from $300 - $500 each
- Jamaica Government exhibitions including vacation allowance - $21,944
- Travel grants to Jamaican students at the UWI - $3,000
- Assistance to private students - $3,000

Towards the end of the period loans emerged as another form of support for needy students. The Students Loan Bureau (SLB) was established in 1970 and was given legal status under the 1971 Students' Loan Fund Act of Jamaica to administer a loan scheme for needy students. The Act empowered the SLB to make loans to Jamaican nationals pursuing studies in HE at prescribed local and international tertiary institutions. This facility enabled students to access loans for tuition, accommodation fees, purchasing of learning materials, travelling expenses and other education related expenses (World Bank Report No. 15594-JM).

RAM for HE under the Mixed System

As a result of the ownership structure of the UWI, several governments decided the process of the resource allocation. The UGC was established as a permanent body in 1962 to determine the resource requirements and to channel the funds from the supporting governments (several sources) to the UWI (one recipient) - (Ministry paper no. 351/01). This was unlike the system in the United Kingdom where the function of the UGC was to channel the funds from one source (the government) to several recipients (the universities). The functions (See Appendix IV) of the UGC were to:

i. Examine the extent to which the university was addressing the national needs by its teachings and research
ii. Examine University proposals for expenditure in the light of the national needs
iii. Recommend the resource requirements to the supporting governments
iv. Ensure that the funds that were voted were properly managed

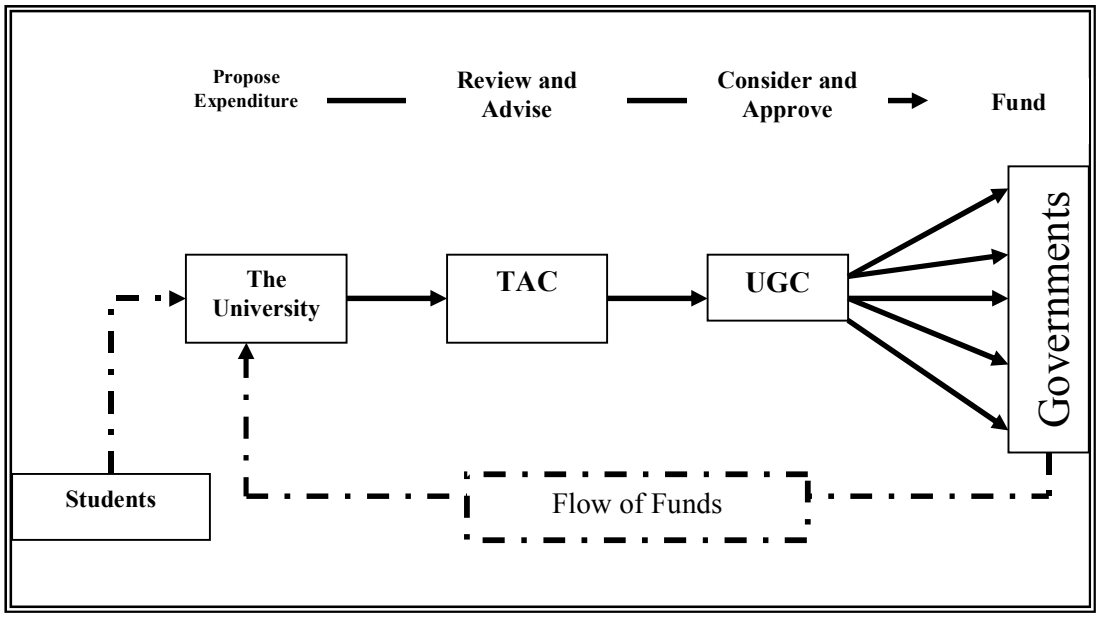
v. Carry out its roles without interfering in the essential (academic and administrative) freedom of the university

The UGC comprised ministers of governments from the supporting countries. Membership was restricted to the:

i. Minister of Finance and the Ministers of Education from Barbados, Jamaica and Trinidad and Tobago
ii. Minister of Finance or the Minister of Education from the Windward Islands and the Leeward Islands
iii. Minister of Finance or the Minister of Education, from British Honduras.

The Chairmanship of the Committee rotated amongst the Ministers of Finance of Barbados, Jamaica and Trinidad and Tobago on a triennial basis. Three persons, selected by the University Grants Committee who were eminent in University administration and not connected with the University of the West Indies, advised the Committee. They were called the technical advisory committee (TAC). Figure 4.1 depicts the resource allocation process for the unitary HE system in the West Indies.

Figure 4.1 - The Resource Allocation Process of the Caribbean HE System 1962 - 1973



The funds were provided in two forms. The first was by way of an annual block grant to cover recurrent expenditure and the second consisted of specific amounts for projects and capital development. As stated in the Ministry Paper No.351/01, the resource

requirements for the 1963-1965 triennia was, "on the basis agreed at the Common Services Conference the contributions payable towards recurrent expenditure is £4,674,700[1]". The funds were remitted to the University in three equal instalments of £1,463,706 per annum. The minister also informed Parliament about the method to allocate the costs among the supporting governments. It was decided to adopt the formula as per the mandatory level formula that was used to share the cost of the Federal Government of the West Indies (1957-1962)[2] to allocate the expenses of the university to the supporting governments. Equation 4.1 is a mathematical interpretation of the expenditure sharing agreement of the supporting governments of the UWI.

$$\mathbf{R_j = R}l_j \qquad \textbf{(4.1)}$$

Where,

$\mathbf{R_j}$ = Portion of recurrent expenditure provided by Jamaica

$\mathbf{R}$ = Recurrent Expenditure of the University

l_j = Levy rate for Jamaica

There was no set formula for sharing the costs for specific projects, capital expenditure and other non-recurrent items. The share of the cost of each project was specifically negotiated. The mathematical interpretation for Jamaica's share is expressed in equation 4.2.

$$\mathbf{N_j = \sum(P}r_j\mathbf{)} \qquad \textbf{4.2}$$

Where $\mathbf{N_j}$ = Amount for Non-Recurrent expenditure provided by Jamaica

$\mathbf{P}$ = Project cost

r_j = Proportion of Jamaica's share of the cost

The mathematical interpretation of the total allocation Jamaica made to the cost of the university is therefore equation 4.3.

$$\mathbf{A_j = R_j + N_j} \qquad \textbf{4.3}$$

or

[1] The Sterling (£) was the currency of Jamaica until 1969 when the country adopted the dollar ($).
[2] The Federation of the West Indies was formed in 1957 and assumed full responsibility for the UWI. In 1962 it was dissolved after Jamaica pulled out. Trinidad followed and it was thereafter determined that the federation was no longer sustainable.

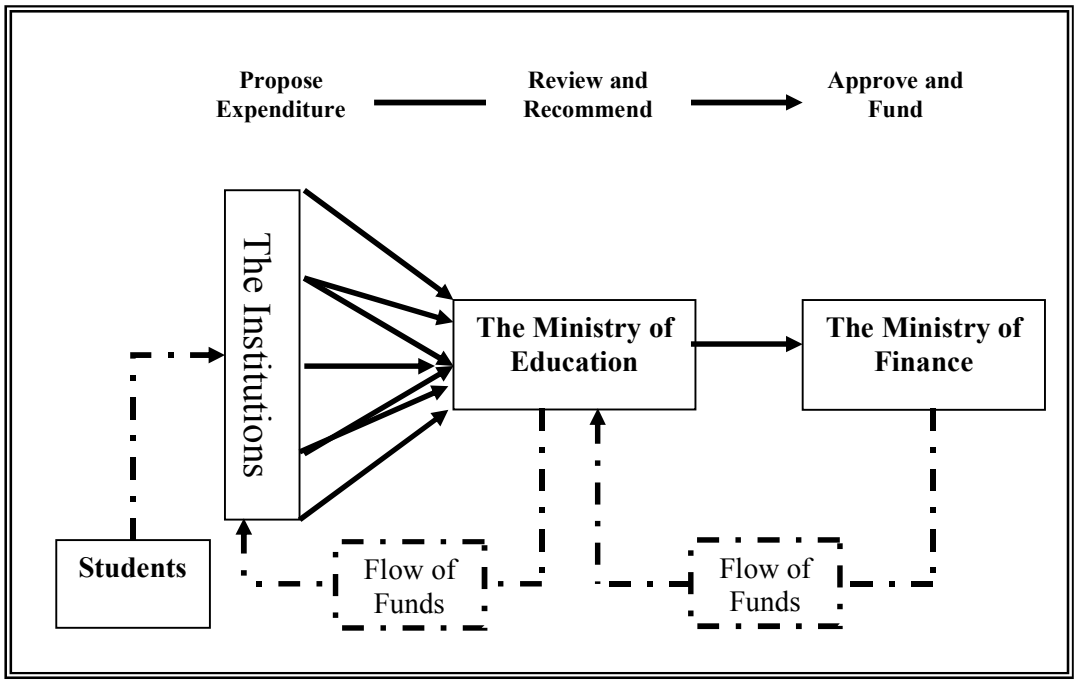
$$A_j = Rl_j + \sum(Pr_j)$$

Where A_j = Total Allocation to Jamaica

Full illustration of the application to the Budget of the university is in Appendix XI.

The national institutions, CAST and JSA were awarded grants called subventions for recurrent and capital expenditure. The subvention was the result of negotiations which began with submissions from the institutions. These were reviewed and recommended by the Ministry of Education (MOE) and the expenditure limit approved by the Ministry of Finance (MOF). The submissions were based on personnel cost for teaching and administration, class material and overheads expenditure. The other institutions were given warrants. Dr. Rae Davis pointed out the difference between warrants and subvention. "In terms of warrants – this would specify the amount for salaries and you are not supposed to tamper with that. On the other hand for the subventions, you got a block of money and there are some requirements, obviously in terms of reporting on how you spend the money but you are not as bound to the line item as with the warrant." (Interview November 13, 2003) Figure 4.2 shows the process that was applicable to the non-university sector of the Jamaican tertiary education system.

Figure 4.2- The Resource Allocation Process for the Non-HEI in the Jamaican Education System, 1962-1973.



Consequences of Fee Paying

The interviewees could not recall any problems in the financing of HE between 1962 and 1973. According to Dr. Rae Davis "… in the early days, I think, if there were any problems, they were guarded. As I stated, the early days went back to UWI and I'm not aware of any problems with the release of funds to the UGC, to the UWI and from the GOJ for the other institutions…" An examination of the UWI's records, however, revealed that there were several concerns about the RAM for the HE system during the period. Seven consequences of the RAM were identified. The first four were associated with the regional nature of the funding mechanism and the other three related to cost efficiency, institutional autonomy and access.

First, some governments expressed the view that the financing arrangement was not facilitating their individual country's priorities and started to finance specific programmes that would further their own interest. The Vice Chancellor in his 1972 report to the Council (M.A. 96.2, pg. 6-7 UWI Archives) made note of the departure from the principle of proportional financing with each country enjoying the privilege of participation in the offering of the university. Trinidad, Jamaica and Barbados undertook the financing of specific programmes in their territory even though the university was already offering those. Economics, Government and French were being offered at Mona, yet Trinidad started the financing of similar programmes in its own country in 1963. A similar approach was taken by Jamaica with the financing of its own management studies programme and Barbados with its offering in Biology. The expense sharing arrangement was further broken when in 1970 some countries decided against sharing in the recurrent cost.

Second, the funding mechanism was not able to support a sustainable capital development programme. The UWI Vice Chancellor in the same report expressed concern that with minor exceptions the contributing governments were unwilling to support any capital development which was outside their own country. That approach, he lamented had retarded the growth of the institution which was further exacerbated by the reducing opportunities for external grants for the HEI capital development. Table 4.1 shows that contribution of external grants had fallen from a high of 9% in 1963 to 1% in 1973.

Third, the supporting governments had reacted negatively to a perceived inequity in the levy system of allocating the cost of the university's operations. The task force which was set up to consider alternative methods of sharing the costs of the university noted that there was a failure in the levy ratio " to take account of the benefits obtained by the Government of a campus Territory from the presence of a campus in its territory …to relate the amounts paid by any contributing government to the benefits received by that government in the form of the number of students trained, the amount of services rendered or otherwise" (UWI VC Report 1972 pp.7-8). The perceived inequity in the cost allocation formula led to a problem with receivables as some governments refused to pay the full amount of the money that the UGC had determined as their share (ibid.). This would suggest a receivables management problem. An analysis of the financial records of the institution for the period revealed that the receivables to government contribution had increased to 15% in 1972, the worse it had been since 1964; the receivable to net assets had also increased to 4% in 1973 and to current asset it reached 57% in 1971. The year 1963 is excluded since it was during that time when the changes were being discussed and the contributing governments were unsure of the extent of their share. Details are in Table 4.2.

Table 4.2 - Receivable Management Analysis of the UWI 1962 - 1973

Receivables Management (How effectively debtors were being Managed)												
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Ave.
Receivables/Total Income	17%	9%	6%	7%	6%	7%	6%	7%	10%	11%	11%	9%
Receivables/Governments' Contribution	25%	12%	10%	11%	9%	11%	9%	11%	14%	15%	15%	13%
Receivables/Net Assets	3%	2%	1%	2%	2%	2%	2%	2%	3%	3%	4%	2%
Current Receivables/Current Assets	37%	24%	21%	29%	24%	41%	33%	40%	57%	48%	43%	36%

Notwithstanding the Vice Chancellor's concern further analyses, however, revealed that it was during the period of fee payment that the UWI enjoyed the best results with receivable management. This will be borne out in the presentation of the data of the other periods.

Fourth, the cost effectiveness of the operations of the UWI was brought into question. The Commonwealth Year Book 1965 as revealed by Alexander et al (1967) published a comparative analysis of some HEIs which suggested inefficiencies in the operations of the UWI. Appendix V shows an extended analysis of the Commonwealth Year Book study. This showed that per student cost for the UWI (the lone HEI in Jamaica) was higher than only three of the selected HEIs from the developed countries, but was less than all the

selected developing countries. The staff/student ratio followed the same pattern. This seriously challenged one of the rationales for establishing a HEI in the region which was to reduce the cost of sending nationals abroad for their HE.

To address this and other concerns, the Ford Foundation (New York) at the request of the Vice Chancellor undertook a study of a review of the university's operations. This was undertaken by Alexander, et al who (1967 pp.13-15) argued against a comparative analysis between universities in developed and developing countries on the basis that;

a. The size of the market of universities in developed countries permitted mass-teaching and high staff/student ratios making it much easier for lower per unit costs.
b. The inadequacy in the quality, quantity and uniformity of the secondary school system in developing countries placed undue burden on the university, hence increased cost of operations.
c. There were peculiar difficulties faced by universities in developing countries that automatically increase their costs. Those were:
    i. Difficulty in recruiting and retaining academic staff, hence, the need to attract expatriates with the additional costs of travel, leave arrangements and inducement allowances
    ii. Non-uniformity of entry from the secondary system resulting in increased teaching load at the tertiary level
    iii. Lack of qualified technical staff forced the academics to carry out the work of technicians
    iv. Lack of local supply stores for books, equipment and repairs resulted in carrying of high inventory and long waiting time
    v. High degree of administrative and committee work required of Deans and Heads of Department reduced the time for academic work
    vi. High demand on service by academics reduced the time necessary for the academic work
    vii. The largely residential nature of the universities in developing countries brought about by the wide dispersion of the population resulted in high capital and administrative expenditure

The above arguments led Alexander, et al (1967) to caution about interpreting the figures in Appendix V.

The fifth consequence of the funding model during this period was that it brought into question the autonomy of the institution. By 1968 the UWI had become concerned that the government of Jamaica was using funding to influence its management and direction. Parker (1971:377) reported from a private interview with Sir John Mordecai, Secretary, Development and Planning, University of the West Indies, July 23, 1970 that "The university did not receive its triennium grant for 1969-72 on schedule, due to the political upsets in 1968-69 and … the University awaits a decision by the University Grants Committee in September 1970 as to what it can expect in funding through 1972". The background to the delay was about Walter Rodney who was a lecturer at the UWI and an activist for the Black Power Movement. According to Sanford in his book "New Jewel" Rodney attended a black writers' meeting in Montreal and was prevented from re-entering Jamaica on October 15, 1968 when he tried to resume his post at the UWI. "Reaction to Rodney's banning was explosive and started with the students who used a variety of disruptive tactics. These actions spread to the streets off campus with a series of riots in Kingston city. The University was closed for a couple of weeks and debates raged on in Parliament" (http://www.multiworld.org/m_versity/althinkers/rodney.htm). The government thereafter delayed the remittances to the UWI in retaliation to the actions of the constituents of the university.

Princess Alice of Athlone, Chancellor of the University, also expressed concerns about the use of funding to challenge the autonomy of the university when she made the following remark on February 1, 1969:

> *Their great problem in the future is going to be how to retain their autonomy and their academic freedom while at the same time complying with the insistent demands of the community that pays for them. It is all very well to say that he who pays the piper calls the tune, but I would add that the tune must be something better than mere pop music*. (Parker 1971, p.377.)

The sixth consequence of the funding model during this period was the perception that the policy did not sufficiently result in the widening of access to HE. Alexander, et al (1967, p.22) suggested that access could be increased by eliminating fees. According to them, "Tuition fees form a very small part of the University's income, and the possibility of waiving these altogether might be explored. It would be justified if it led to a marked increase in student entry, which in turn would reduce unit costs".

Throughout this study the simple method is used to calculate the average enrolment growth. 1963 is selected as the base year since it was the start of the triennium for the UWI. The formula used for calculating the growth average was:

$$\{(EE - BE)/BE\}^{1/n}$$

Where EE = Ending Enrolment

BE = Beginning Enrolment

n = Number of years

Table 4.3 shows that for the fee paying period by 1974 the average growth rate for Jamaicans enrolled in HE was 21%. During the period of fee paying the rate varied between 12% and 17%. Jamaica's Growth rate in HE was also consistently below that of the region which averaged at 19% in 1974 and varied between 13% and 19% during the fee paying era.

Table 4.3 - Growth Rate in HE Enrolment during the Fee Paying Era, 1963-1973

	Jamaicans at UWI			UWI			
	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963/64	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963/64	Number of Years
1963/64	0%	0%	0%	0%	0%	0%	1
1964/65	14%	14%	7%	15%	15%	8%	2
1965/66	19%	36%	12%	20%	39%	13%	3
1966/67	N/A	N/A	N/A	7%	49%	12%	4
1967/68	N/A	64%	13%	11%	65%	13%	5
1968/69	23%	102%	17%	17%	93%	15%	6
1969/70	-7%	89%	13%	10%	112%	16%	7
1970/71	N/A	N/A	N/A	8%	129%	16%	8
1971/72	N/A	N/A	N/A	15%	164%	18%	9
1972/73	N/A	N/A	N/A	9%	189%	19%	10
1973/74	N/A	226%	21%	5%	205%	19%	11

N/A denotes that data was not available for calculation

FREE EDUCATION 1973 – 1986

A major policy shift in funding education in Jamaica came when Prime Minister Michael Manley announced the policy of free education from the primary to the higher education level on, 2nd May 1973. Appendix VI contains the excerpt of his speech on the introduction of Free Education. The policy was intended to widen access to HE in Jamaica.

Features of the Free Education System

There were four distinguishing features of the free education system in Jamaica as identified by the interviewee and corroborated by the historical record. The first feature was that there was a single policy for the entire education system**.** No level of the education system was regarded as having a higher priority than the other. No student at any level was required to pay tuition fees. This was the main feature of the system in Jamaica as the government assumed financial responsibility for the administration, development and delivery of the programmes of all publicly supported educational institutions.

The second feature was that there was guaranteed financing for any Jamaican student who was accepted to read for a degree at the UWI or to study at any TLI. The Prime Minister was recorded in the Daily Gleaner on May 18, 1973, as saying that, "because of the importance of higher skills and our determination to bring these skills within the reach of the poorest in the land the government would be making available free tuition for university education for all Jamaicans qualifying for and gaining entrance at the UWI". The Hon. Maxine Henry-Wilson stated, "After the declaration of free education – persons were allowed to attend the University of the West Indies (UWI) free" (interview February 13, 2004).

The third feature was that the government accepted responsibility for the living expenses of all the students during their course of study. This meant that the administrative expenses for residential operations in secondary and post-secondary institutions became the responsibility of the government. Students at the then further and higher education levels were therefore brought on par with those in the teacher training colleges and were awarded Boarding Grants to cover their residential expenses whether or not they lived on campus. Sherlock (1986 p.59) noted that the Boarding Grant programme was a part of the Free Education Policy of 1973. He also noted that initially government provided:

a. Full boarding to all students living in Halls of residence at UWI up to a maximum of $1,300
b. Boarding assistance to those boarding off campus
c. Some assistance to students living at home

Cabinet changed the parameters when it took the decision on July 21, 1975 to provide every student entering the system after September 1, 1975 a fixed

grant of $760 per annum ($20 per week for 38 weeks) irrespective of the place of abode, residence or need

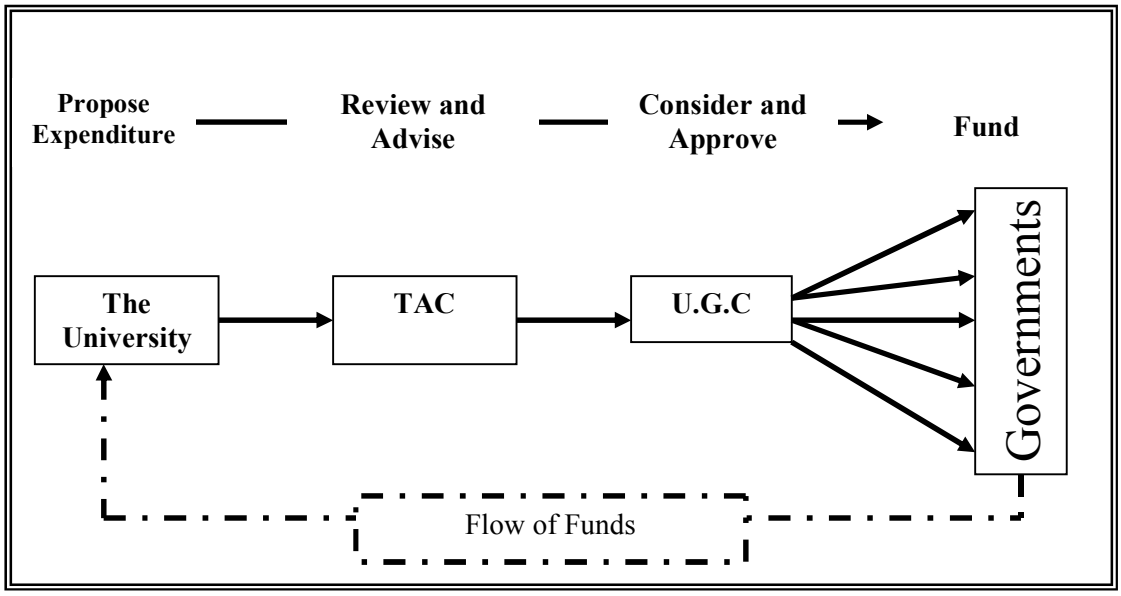
Appendix VIII details the boarding grant assistance given to students of UWI and CAST between 1973 and 1986.

A fourth feature was the expansion of the students' loan scheme to assist students to provide for other personal expenses related to education for example, books and subsistence. The SLB which began operations in 1970 continued to grant loans to students of recognised TLIs but since tuition and boarding were free in Jamaica it was no longer necessary to grant loans for those purposes to students who were studying locally. These types of loans, however, continued in force for those persons studying overseas. Dr. Rae Davis pointed out that receiving a loan from the SLB was virtually automatic because once someone applied, it would be granted (interview November 13, 2003). The loans granted during the free education era are contained in Appendix VII.

RAM for HE during the Free Education Era

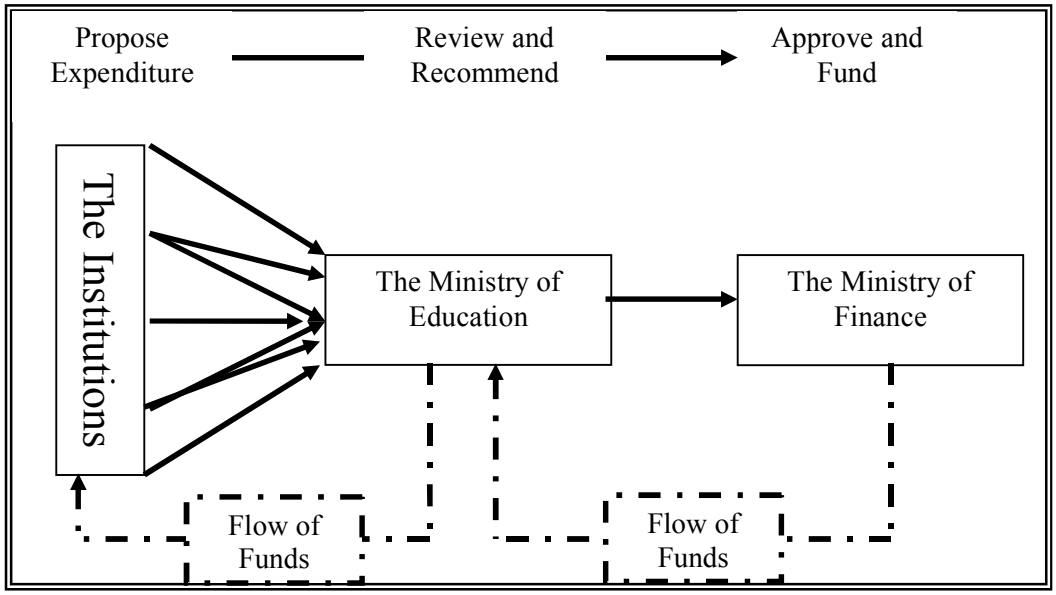
The system of allocating the funds to the HE system continued to be via the UGC with advice from its TAC. As a result of the elimination of fees, students no longer took part in the resource allocation flow, see Figure 4.3.

Figure 4.3 - Resource Allocation Process for HE under Free Education, 1973-1986



The change in policy also resulted in an adjustment to the process for funding the national tertiary institutions in Jamaica, see Figure 4.4. The only change the Figure shows is that the students were removed from the financing flow to the institutions.

Figure 4.4 - Resource Allocation Process for Non-HEIs under Free Education Policy, 1973-1986



The dissatisfaction with using the levy ratio to allocate resources to the university led to a change in RAM. It was decided to eliminate the levy system and use the per capita cost (PCC) as the basis for distributing the cost to the participating Government. Appendix IX summarises the various options considered at a meeting of the sub-committee of the TAC on April 15, 1969. The effects of the options on the proportionate contribution are shown in Appendix X. The UCG reviewed the various options at a meeting on March 24, 1972 and agreed that for the triennium 1972-1975 the basis of contribution to the recurrent expenditure of the university should be economic cost modified by a discount of 1.9% of total expenditure, which was given to the Non-Campus Countries (NCC) and absorbed by the Campus Countries. The decision of the UGC was noted at the University Council meeting in April 1972. It was felt that the most equitable and realistic basis for allocating the recurrent cost to participating governments was economic cost but because of the intrinsic benefits derived by host countries where campuses were located then there was the discount to the NCC. It was also agreed that capital costs should be met in the first instance by the host country which had the right to reclaim a portion from the university through the budget process. They could include in succeeding budgets, amounts for repayment, which could be calculated by taking the interest rate on the money borrowed or

an agreed interest rate and amortise the total over 50 years in the case of building, 15 years for major equipment and 3-5 years for minor equipment and furnishing. An illustration of how the PCC work is outlined in Appendix XI and the mathematical interpretation of Jamaica's share is as per equation 4.4.

$$\mathbf{A_j = \{\sum(PCC_f * E_{fj}) + D\} + \sum(Pr_j)} \qquad \mathbf{4.4}$$

Where $\mathbf{PCC_f}$ = Cost per full time student in a given faculty

$\mathbf{E_{fj}}$ = Total Jamaican student enrolment in a given faculty

$\mathbf{D}$ = Discount to NCC being absorbed by Jamaica

$\mathbf{Pr_j}$ = Non-Capital expenditure proportion being provided by Jamaica

Consequences of the Free Education Policy

There is the perception that the Free Education policy resulted in increasing of access to HE. The interviewees overwhelmingly thought this to be the case. According to them

> *Dealing with the "free education", clearly, in terms of education supporting the economy, if you have a strong education system all the studies indicate that the result will be a strong economy and therefore a nation can look forward to a free flow from what ever level, primary straight through to higher education with no concern about payment for everything, then the end result would be more empowerment to the teaching environment, a stronger economy, so that clearly would benefit most of the poorer class.* (Dr. Rae Davis, November 13, 2003)

> *Definitely, many students benefited – those who could not afford it. They benefited from education so if there was any major benefit – sure it was the question of access. Once you qualified and there was a space in the University then you got a space.* (Hon. Maxine Henry-Wilson, February 13, 2004)

> *In fact, many people will tell you that to free education meant a lot to their career both at the secondary and tertiary levels.* (Dr. Alfred Sangster, November 7, 2003)

> *Yes, in a sense, it sought in a crude way to remove the possibility that someone would be excluded from tertiary education because of resources – that was a major factor, in our point of view towards the promotion of equity..* (Hon. Omar Davis, February 20, 2004)

Table 4.4 was compiled using the formula already established for calculating the average growth rate in enrolment.

Table 4.4- Growth rate in HE Enrolment during Free Education, 1973-1986

	Jamaicans at UWI			UWI			
	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963/64	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963/64	Number of Years
1972/73	N/A	N/A	N/A	9%	189%	19%	10
1973/74	N/A	226%	21%	5%	205%	19%	11
1974/75	9%	255%	21%	4%	217%	18%	12
1975/76	6%	275%	21%	5%	232%	18%	13
1976/77	7%	301%	21%	4%	245%	17%	14
1977/78	9%	336%	22%	7%	270%	18%	15
1978/79	1%	341%	21%	6%	290%	18%	16
1979/80	6%	368%	22%	6%	312%	18%	17
1980/81	-2%	360%	20%	1%	316%	18%	18
1981/82	6%	386%	20%	5%	336%	18%	19
1982/83	3%	399%	20%	0%	338%	17%	20
1983/84	6%	431%	21%	5%	358%	17%	21
1984/85	4%	454%	21%	5%	383%	17%	22
1985/86	-4%	429%	19%	1%	390%	17%	23

The average enrolment rate for Jamaicans at the UWI during fee paying ranged between 7% and 17% which was below the institutional average of 19%. However, during the free education period the Jamaica average growth was above 20%. In 1985/86 the enrolment of Jamaican dropped by 4% relative to the previous year and this took the period average from 21% to 19%. It is to be noted too that the Jamaican enrolment growth rate was consistently above the institutional average. This was a reversal of the trend in the fee-paying era where the Jamaican growth rate was below the institutional average. The analysis therefore shows that more Jamaicans were being admitted to the UWI than from the other supporting countries. It cannot be concluded however that free education resulted in improved access of Jamaicans to HE because the growth rate at the end of the period was 2% less that of the first year of the programme.

The economic plight of Jamaica was a consequence of the free education policy of the 1970s. According to Rae Davis (November 13, 2003):

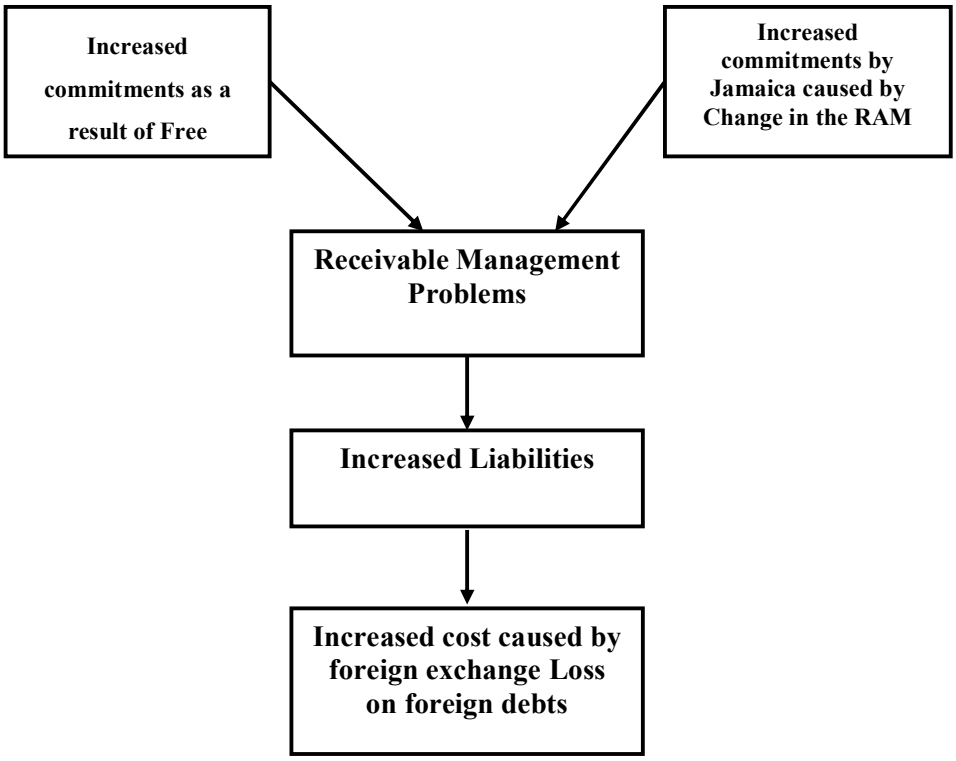
> *The problems started probably in the mid to late 1970's then the weight of responsibility of funding all the different elements of tertiary education including providing a boarding grant and so on began to take its toll on the economy and they started thinking of a different model and from even in the early to mid 1980's*

studies were being done to look at an alternative to funding education in general and tertiary education.

Sharpley (1984) and Killick (1984) pointed out that in keeping with the People's National Party's (PNP's) election manifesto many new social and economic programmes were introduced between 1972 and 1976. The official ideology of "Democratic Socialism" influenced the priorities attached by the Cabinet to income distribution, inflation and the balance of payments. Free education was one of the wide ranging social programmes introduced during the first two years of office which resulted in government expenditure exceeding the approved estimates by over 20% in 1974/75. By 1975/76 the country had a budget deficit of 37% and this escalated to 75% by 1976/77. The estimates of consumption and investment rates for the public and private sectors showed that the total public sector expenditure increased from 18.6% to 26.3 of G.D.P. between 1973 and 1976. The increase was used mainly for consumption which included supporting the free education policy. The economy plunged into prolonged recession and disequilibria and between 1972/80 real G.D.P. per capita declined at an average annual rate of 4%, G.D.P. from the manufacturing sector declined on average by 3.3% annually, mining fell by 1.3% and there was no growth in agriculture. Other indicators also recorded negative trends during the period. Savings and investment rates declined, unemployment rate increased to an average of 23% for the 1972-1980 period, double digit inflation occurred frequently and domestic prices rose to an average annual increase of 25% in 1974/75 and 47% in 1978/79. Appendix XV shows the worsening economic indicators of Jamaica 1970 – 1980. Details are contained in the Fiscal Policies 1988, Jamaica and the International Monetary Fund, Lumsden, Mathies and Blefer 1981, Structural Adjustments of the Jamaican Economy 1082 –1987, Sharpley 1984, Tanzi 1984.

A third and a major consequence was that the free education policy resulted in financial difficulties of the HEI. The policy, which eliminated fees and increased the access rate to HE, had in turn led to increased cost to the Jamaican Government. The RAM also led to increased cost to Jamaica and the GOJ's inability to meet such costs in a timely manner resulted in cash flow difficulties for the UWI. The liabilities thereafter increased as well as institution's operational cost increased because of foreign exchange loss on international debts. This is illustrated in Figure 4.5 and detailed below.

Figure 4.5: Financial Problems as a Consequence of the Free Education Policy and the RAM during that Period, 1973-1986



The problem with receivables surfaced in the 1975 as can be seen from exchanges between the University Bursar and the Permanent Secretary (PS) of the MOE

a. 15th May 1975 the Bursar wrote to Deputy Financial Secretary (DFS), MOF with a copy to the PS MOE complaining of late remittances causing an overdraft of over J$500,000
b. 26th May 1975 PS MOE responded that he was unaware of any problem the university was having in obtaining its regular remittances.
c. 3rd June 1975 Bursar proved that monthly payments for April and May were made 11 and 16 days late respectively. He also pointed out that in respect to other projects there were also difficulties.
d. 13th June 1975 PS suggested that delays may have been due to the bureaucracy of the system in satisfying the Ministry of the Public Service (MPS) before the funds could have been channelled through the MOE.

The problem became graver with the receivables from the contributing governments and particularly Jamaica getting worse every year. An analysis of financial records as outlined in Table 4.6 shows the extent of the problem.

Table 4.5: Analysis of the Receivables of the UWI during Free Education Era, 1973-1986

	Current Receivables/ Total Income	Receivables/ Governments Contribution	Receivables/ Net Assets	Current Receivables/ Current Assets
1974	10%	13%	4%	28%
1975	11%	15%	5%	32%
1976	11%	14%	7%	30%
1977	13%	18%	8%	25%
1978	22%	32%	16%	60%
1979	12%	17%	10%	41%
1980	14%	20%	11%	35%
1981	17%	23%	14%	42%
1982	30%	43%	26%	67%
1983	35%	50%	33%	74%
1984	28%	42%	26%	63%
1985	36%	57%	28%	76%
1986	35%	53%	26%	63%

By 1985 receivables were 36% percent of total income, 57% of total government contributions and 76% of the current assets. The receivable level was the major reason, therefore, for the cash flow problems of the institution. An analysis of the institution's records revealed that this was a major concern during the period. The extent of the problem is summarised below:

a. October 5, 1977 internal receivable schedule showed balance outstanding from Jamaica of J$1,952,873.
b. June 6, 1978, VC wrote to the PS MOE requesting that they meet with the MOF and the FS "to work out some strategy or arrangement for liquidating the balance since it would be disastrous if our published accounts had to show at year end Jamaica's indebtedness to the tune of $8M or more."
c. 5th September 1978 memorandum from the Bursar to the acting VC pointed out that the overdraft at the bank was in excess of $750,000 and would have been about $2M had the institution not retired a part of its investment and used funds intended for other purposes for operations of the Mona Campus. The memo also pointed out that "the situation is caused by the non-payment of the arrears due by the Government of Jamaica."
d. December 7, 1979 VC wrote to Minister of Finance informing him that Jamaica had fallen in arrears again and outstanding amount was J$5.4M.

e. Other correspondences reiterate the mounting problem. On 14th September 1980 acting VC to the FS, filed a note of a meeting 2nd September 1980 between UWI led by VC and MOF led by FS about the crisis

f. FS letter to VC on May 6, 1983:

You will no doubt appreciate that generally funding has been extremely tight and that the Ministry of Finance and Planning has released to the Ministry of Education for the University as much as we have been able to provide within the constraints under which we are operating. I am afraid that the prospect for 1983/84 is still a very difficult one, but we will continue to attempt to release for the University as much as we can within the limits of the cash constraint.

g. VC wrote to Prime Minister on August 4, 1983 informing him that "the situation has indeed reached crisis proportions because our bankers, National Commercial Bank Ltd., have refused to honour any more overdrafts without the Letter of Comfort being established."

The receivables management problems were exacerbated by exposure to foreign exchange rate risk. This was seen in the dispute over the method of billing and further demonstrated in a letters to the PS of the MOE of 28th August 1978, and to FS from the Bursar on 6th January 1984. The 1978 letter informed that the devaluation of the Jamaican dollar had resulted in increased cost to the Jamaican government for the Trinidadian and Barbadian campuses. The devaluation had resulted in an increase debt of J$2M or 15%. This was because the indebtedness for the non-Jamaican campuses was being settled long after movements in the exchange rates.

Conversion Rate at	**1976-77 Avg.**	**1.8.77**	**1977-78 Avg.**
J$ 7,950,532	7,950,532	7,950,532	7,950,532
TT$ 8,633,295	3,509,470	4,496,508	4,796,275
Bds$ 3,459,923	1,687,767	2,162,452	2,306,615
	13,147,769	14,609,492	15,053,422

The letter of 1984 further pointed out that the foreign exchange rate exposure risk had increased significantly.

Consequent upon the devaluation of the Jamaican dollar, I have to inform you that the Government's assessed contribution for 1983-84, covering the period December 1983 to July 1984, has increased by a further J$24M (approx.) based on J$3.15 = US$1.00 and is likely to increase as further downward movements in the exchange rate take place.

The Bursar in his correspondence to the VC of January 23, 1986, gave an example of the cost of foreign exchange risk. According to him,

Unfortunately, our accounts as at 31st July, 1984 showed large amounts owing in TT$ - TT$16,649,462 to the St. Augustine Campus and TT$23,792,360 to the Government of Trinidad and Tobago, a total of TT$40,441,822 or J$45,332,216, whereas the Government of Jamaica owed the University J$27,089,413. As a result of the devaluation of the J$, the value of Trinidad and Tobago debt moved from J$45,332,216 to J$82,054,729, but the Jamaican debt has not changed…

The above showed that there was a new debt to Trinidad of J$18,242,803 (i.e. J$45,332,216 less J$27,089,413). The exposure had caused the debt to Trinidad to increase by J$36,722,513 (i.e. J$82,054,729 less J$27,089,413 and the original value of J$18,242,803)

By 1979 the institution was facing public ridicule over the state of its financial affairs. The National Target, a new paper in Trinidad, on Saturday January 29, 1979, published an article entitled, "UWI Running Broke". The article placed the blame on Jamaica for not being able to honour its commitment for financing the university. It stated, "The main reason for the dismal financial plight of the university is the continued non-payment of monies by Jamaica. Jamaica now owes the university roughly $8M… funds allocated for special projects like expansion have been rerouted to defray administrative costs of running the university".

The free education policy did not fare better for CAST, which was regarded as being at the next level to the UWI in the education system in Jamaica. Table 4.6 shows that during the period it consistently operated with deficits, delayed payments to creditors and overdrafts and had negative working capital and accumulated fund.

Table 4.6: Financial Results of CAST, 1974-1986

	Surplus/ (Deficit)	Accumulated Fund	Short Term Liabilities	Working Capital
1974	40,977	20,328	110,271	86,138
1975	(146,654)	(126,326)	244,824	(34,682)
1976	(71,029)	(129,855)	236,359	(51,934)
1977	89,895	(39,960)	212,982	(3,097)
1978	145,430	105,470	227,968	141,629
1979	n/a	n/a	n/a	n/a
1980	n/a	n/a	n/a	n/a
1981	98,997	(108,662)	166,158	432,103
1982	(151,974)	(260,636)	215,185	593,026
1983	(643,866)	(904,502)	291,722	35,843
1984	(794,125)	(1,698,627)	819,813	(354,595)
1985	(641,611)	(1,904,875)	1,496,166	(768,904)
1986	(126,875)	(2,031,750)	1,728,766	(396,294)

Source: Audited Financial Records of CAST

Unpaid subvention to the institution was not regarded as receivables since the Government was not obligated to honour them. This was the reason for its financial problems which manifested themselves in deficit operation and lack of working capital rather than high receivables.

Flowing from the financial difficulties was the consequence that the policy placed a strain on the resources for capital/infrastructural development and that was a factor which limited capacity and restricted access. A cause of this consequence was the responsibility placed on the government of the campus country to provide the funds for all capital development. The Hon. Maxine Henry-Wilson (Interview February 13, 2004) pointed out that she was a lecturer on the UWI, Mona campus during the free education era and that a significant impression she had was "the extent to which the physical environment of the University had declined". A bursary document from the UWI entitled "Capital Needs" dated January 1975 corroborated the minister's recollection and supports the point that the physical facilities could not support burden of the free education policy. The document pointed out that further increase in enrolment was no longer possible because the facilities were up to capacity and no funding was being provided for additional infrastructure. Between 1965-66 and 1974-75 the enrolment had doubled without increased capacity being provided.

A fifth consequence was the threat that the instability of the funding was causing the quality assurance of the programmes. The Administrator of University Hospital of the West Indies informed the FS of the MOF in a letter dated 12th July 1983, of the threat to withdraw the accreditation of the medical faculty and hospital as a teaching institution if funding was not provided to maintain the plant and buildings.

The method of billing the government on actual cost, or ex post pricing caused disputes. The cross country subsidisation of faculty cost also exacerbated the problem caused by the ex-post pricing strategy. The MOF in a document dated October 2, 1978 by Tyndall and Terrelonge contended that in the 1977-78 academic year 90% of Jamaica students were stationed at Mona and 10% were spread across the Cave Hill and St. Augustine campuses. As such they believed that the devaluation of the Jamaican dollar should have affected only 10% of the non-Jamaican costs. On that basis they claimed that the UWI was overstating the bill to the Government by $3,552,073. The university refuted the claim in its correspondence of October 5, 1978, by stating that:

> *This seems to be based on the erroneous premise that the per capita cost is calculated separately for each campus whereas in fact it is based on the total expenditure in each faculty across the three campuses. In addition it has been agreed by UGC that in order to guarantee the university's stability in its revenues in relation to its expenditure commitments, each contributing territory should be billed in relation to the approved expenditure at each of the three campuses in the currency used in the host country.*

The above exchanges show that Jamaica had perceived a disadvantage to itself in the faculty average method of allocating cost.

Linking the financing of educational institutions directly to the inputs created a salary parity dispute within the teaching profession in Jamaica. Sherlock (1991 p.70) pointed out that in 1973 the MPS which was responsible for salaries and conditions of service in the public service carried out a reclassification exercise which "found that all teaching posts in all tertiary institutions, except the University of the West Indies, were comparable in terms of their job descriptions, duties and responsibilities". The teaching staff of CAST and JSA objected to this view and in 1976 withdrew from the Jamaica Teachers Association (JTA). They thereafter adopted the strategy of negotiating their salaries and fringe benefits after the JTA had completed its negotiation. This enabled them to obtain increments above those of the JTA. The JTA thereafter included a clause in their agreement which states that "any increases granted to any other group negotiating for teachers after the JTA has concluded its negotiation with the government would automatically be granted to the JTA members of comparable categories" (ibid. p.71). In 1979 there was a protest over the fact that CAST and JSA were successful in negotiating increases above those of the JTA. At the same time the country had failed an IMF test[3], the government then pleaded inability to pay and informed CAST and JSA that they had to be paid at the same level of JTA. This resulted in an industrial dispute over failure to honour the agreement with the MPS. The matter was referred to the Industrial Disputes Tribunal (IDT) to determine "whether there were differentials between Tertiary Institutions which warrant pay differentials" (ibid. p.72). The tribunal ruled that there were such differentials and recommended higher salaries for the staff of CAST and JSA than those of the teachers' colleges. The JTA then struck in September 1980 and questioned the competence of the IDT to make the

[3] As a result of the economic problems Jamaica entered a three year Extended Fund Facility (EFF) with the IMF in 1976. The assessments of compliance with conditionalities under the programme were called tests.

judgement it did. On September 16, 1980 the Government settled the matter by making the same award to the JTA.

Another consequence was that the policy of tuition free education to the tertiary level had redirected needed resources from the primary and secondary levels and had caused major problems to the system. This was suggested in Sherlock (1986), which quoted Ministry Paper 10 of 1986, "a disproportionate amount of the education budget has had to be expended on tertiary education whereas the greatest need for funding is at the primary and secondary levels". It made note that at least 50% of the school leavers at the primary level were functionally illiterate and that the secondary schools were inadequately equipped to deal with those who were deemed acceptable.

CESS 1986 - 1992

As a result of the problems experienced in financing the free education policy the GOJ on February 18, 1986, decided to charge a cess on the students of the UWI and CAST. Cess is defined by Oxford Concise Dictionary as a tax or a levy and is the concise version of the word assessment. Dr. Rae Davis (Interview November 13, 2003) explained the system as follows:

> *The cess was imposed by the GOJ but the fee for UWI and CAST remained the same i.e. the tuition fee but the cess went to the GOJ who used that to provide subventions for the University. Of course, as far as the students were concerned it was more money even though they paid the cess at the Bank of Jamaica. The UWI and CAST didn't actually get the cess in their hands. It came back through the subvention but certainly it was increased student-participation in funding their own education.*

Sherlock (1986) pointed out that the reasons for the change in Government policy were:

a) Dramatic increases in the cost of education
b) Accelerating population pressure, and consequent increases in the number of students at the secondary and tertiary levels of the education system
c) A sharp fall in government revenue from the bauxite/alumina industry
d) The need according to Ministry Paper 10 of 1986, to rebalance the educational budget without sacrificing the maintenance and development of the basic education system

The period of the cess coincided with CAST introduction to the arena of HE as on March 14, 1986, The College of Arts, Science and Technology Scheme (Approval) Order 1986 came into existence. This order, among other things gave authority to the Council of the College to "confer any degrees, diplomas, certificates or other marks of distinction on students of the College who have pursed courses of study approved by the Council and have passed such examinations or other tests as may from time to time be required by the Council". It should be noted that the mandate did not include that of research.

Features of the Cess

The main feature was that students were required to pay the Government a fee (tax) that was pegged to the economic cost of their education**.** The rate was announced at 30% of the economic cost and as such a CAST student was asked to pay $900 p.a. and the UWI students' amounts varied depending on the faculty. On the recommendation of the Sherlock Taskforce however the rates were reduced. CAST Students were asked to pay $450 and those of the UWI varying amounts as per Table 4.7.

Table 4.7 – UWI Cess, 1986-87

	CESS	Economic Cost	CESS as % of Econ. Cost	Original Level of CESS as a % of Econ. Cost
Agriculture	1,650	67,223	2.4%	7.3%
Arts & General Studies	1,400	17,600	7.9%	28.1%
Education	1,400	20,500	6.8%	20.5%
Law Year 1	2,000	67,223	3.0%	8.9%
Law Yrs 2 & 3	1,650	21,500	7.7%	23.0%
Medicine – Pre-Clinical	1,650	48,290	3.4%	10.2%
Medicine – Clinical	1800	30,000	6.0%	20.0%
Natural Science	2,000	43,000	4.6%	13.9%
Social Sciences	1,650	22,400	7.4%	22.1%
Engineering	1,400	17600	7.9%	23.9%

Source: Report of the Committee on Tuition Fees, UWI, June 8, 1991

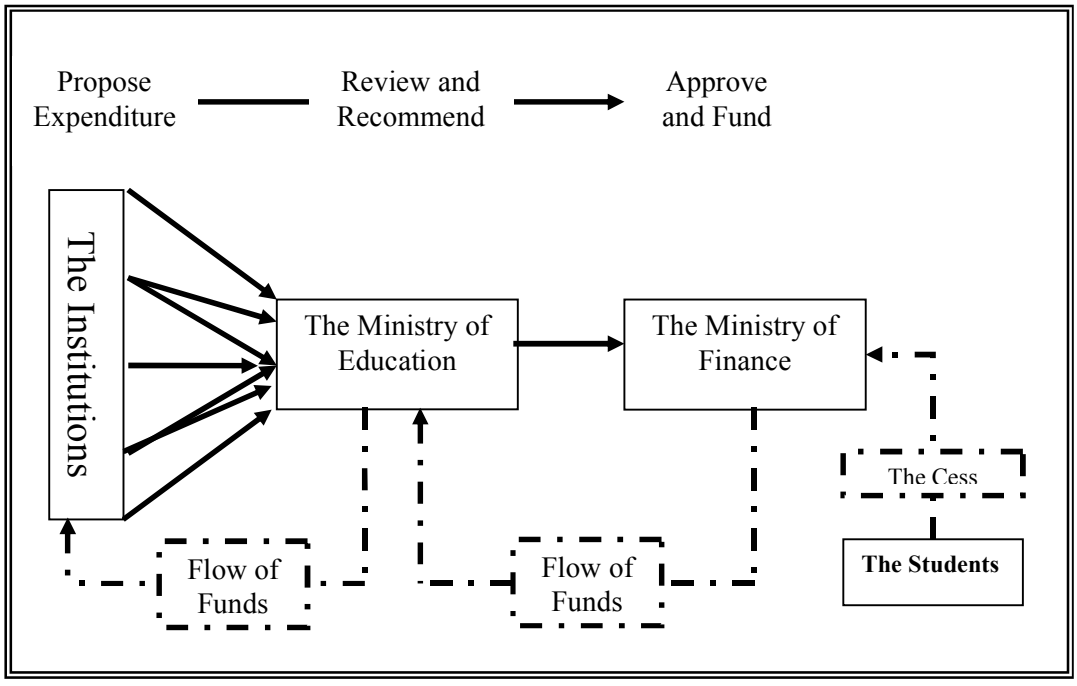
The second feature was that the cess was restricted to students of two TLIs (UWI and CAST), those at teacher training colleges and the College of Agriculture (CA) were exempted.

The third feature was the abolition of automatic boarding grants for all students. Also along with the tax it was announced that the Boarding Grants of J$760 p.a. to the students of the two institutions would also be abolished. The Government later accepted the recommendation of the Sherlock Task force that the boarding grant should be continued for students who could demonstrate the need for such assistance.

RAM During the Period of the Cess

Notwithstanding CAST's entrance to the HE arena the resource allocation process for this institution remained the same as the non-HEIs in the national tertiary education system. Resources were allocated to this institution on the same basis as the other national institutions. Salaries were determined by the bargaining procedures with the Ministry of Public Service (MPS) based on predetermined categories and number of persons (The Establishment). The allocation for overhead cost, equipment and materials had to be negotiated with the MOE budget division. Figure 4.6 shows the adjustment to the resource allocation process for CAST as brought on by the introduction of the cess.

Figure 4.6: The Resource Allocation Flow for National TLIs during the Period of the Cess, 1986-1993



In addition to the change caused by the cess there were other changes to the resource allocation process and model for the UWI. In October 1977 the government of Trinidad

and Tobago published a white paper on "National Institute of Higher Education" which included, among other things, proposals for restructuring the UWI. Consequently the MOE of the supporting countries requested the UWI to hold discussions with the government of Trinidad and Tobago to reconcile any differences between the proposals from their Inter-Governmental committee report of 1976 and the White Paper. The discussions were finalised on June 22, 1984 when the "UGC received MPV 2/1982 and noted the details of the new financial arrangement which had been accepted by the previous meeting of UGC held on September 21, 1982 to come into effect as from August 1, 1984". This resulted in the restructuring of the university and changes to the resource allocation mechanism and process as hereunder explained.

The activities of the university were separated into four categories, namely:

- Campus activities
- Central university activities
- Specialised research and services at each campus
- Special programmes for the non-campus countries

The duties and responsibilities of each area are found in the minutes of the Ministerial Policy Committee of the UGC, Feb. 13, 1982 and summarised in Appendix XI. The four activities were grouped into two broad costs areas, which Beryl Miller (1987) identified as:

- Campus costs – teaching costs of the faculties on the campus and the campus central costs for common Services and Administration.
- Central university costs – university cross-campus administration; extra-mural activities in non-campus territories; specialist research departments (e.g. ISER) and other university programmes for non-campus territories.

The PCC or economic cost was used to finance the campus costs and the university cross-campus administration. There was a change to the methodology, which was more specific to both faculty and campus. Miller (1987) outlined that the PCC was calculated as follows:

> The faculty's expenditure for the year at each campus divided by the total number of students (weighted) in the faculty at that campus
>
> PLUS
>
> Central expenditure/common services of the campus divided by the number of students (weighted) at the campus.
>
> PLUS
>
> Centre expenditure at all three campuses divided by the total number of students (weighted) attending the university for the year.

The RAM policy shift adjustment to equation 4.4 as is represented in equation 4.9.

$$\mathbf{PCC_{fm} = (SC/E) + (FC_{fm}/E_{fm})} \quad \mathbf{(4.4)}$$

$$\mathbf{PCC_{fm} = (SC/E) + (SC_m/E_m) + (FC_{fm}/E_{fm})} \quad \mathbf{(4.5)}$$

Where

SC	=	Centre expenditure or university shared costs
SC_m	=	Administrative cost for the campus or campus shared costs
FC_{fm}	=	Expenditure of a particular faculty on a particular campus
E	=	FTE enrolment for the entire university
E_m	=	FTE enrolment of the campus
E_{fm}	=	FTE enrolment for the particular faculty on a particular campus
PCC_{fm}	=	Per capita cost for the particular faculty on a particular campus.

The costs associated with the Specialised Research and Service Units were to "be kept separate from the regular teaching costs on the Campus" (Restructuring the UWI, 1980) and "be funded through schemes approved by the Central UGC" (Minute of MPC Feb. 13, 1982). Special programmes for NCCs were also financed differently and were initially in the following proportion

Non-Campus Countries	10.00%
Trinidad and Tobago	45.00%
Barbados	8.19%
Jamaica	36.81%
	100.00%

The formula for attributing the cost for the resources to be allocated to the University was radically changed as is seen from the mathematical representation of equation 4.10. The details of equations 4.6 to 4.9 and given in Appendix XI.

$$\mathbf{A_j = \sum(PCC_{fmj} * E_{fmj}) + D_j + \sum (SRC * x_j) + (NPC * y_j)} \quad \mathbf{(4.10)}$$

Where

D_j	=	Portion of discount being absorbed by campus country
SRC	=	Cost for specialised research
NPC	=	Cost of special programmes for NCC
x_j	=	SRC rate of absorption for Jamaica
y_j	=	NPC rate of absorption Jamaica

Up to July 31, 1990, the contribution to the UHWI was treated similarly to the special research units in that a particular rate of absorption was charged. Since August 1, 1990, the contribution to the UHWI was treated similarly to the teaching costs of the faculties and the PCC formula was applied. It was thereafter funded separately.

There were also changes to the resource allocation process as new funding bodies were introduced and these resulted in a new relationship between the sponsoring governments and the university. The Campus Grants Committees (CGC) assumed the role of the UGC as can be seen from their terms of reference which according to the minutes of the Ministerial Policy Committee (MPC) of the UGC September 21, 1982, were to:

a) Examine the extent to which the university through the activities of the campus was meeting the national and regional needs, both in education of students and in research of benefit to the campus country and the region.
b) Examine proposals for expenditure at the campus in the light of these national and regional needs, recommend to governments the provision of the necessary finance, and satisfy itself that the money voted is properly managed.
c) Do the above without interfering with the essential freedom of the University, thereby leaving the conduct of university business to the organs of academic self-administration.
d) In consultation with the Grants Committee of the other campuses, and the UGC, and with due regard for the specific needs of the NCCs:
    a. enquire into the financial needs of university education with particular reference to the relevant campus,
    b. advise the contributing government of the grant to be made towards meeting these needs on a triennial basis, and
    c. assist, in consultation with the university and other bodies concerned, in the preparation and execution of such plans for the development of the Mona/St. Augustine/Cave Hill Campus of the university as may from time to time be required in order to ensure that they are fully adequate to national and regional needs.

The membership of the CGC was as follows (MPC September 21, 1982):

a) A minister of government of the campus country who should be chairman of the CGC;

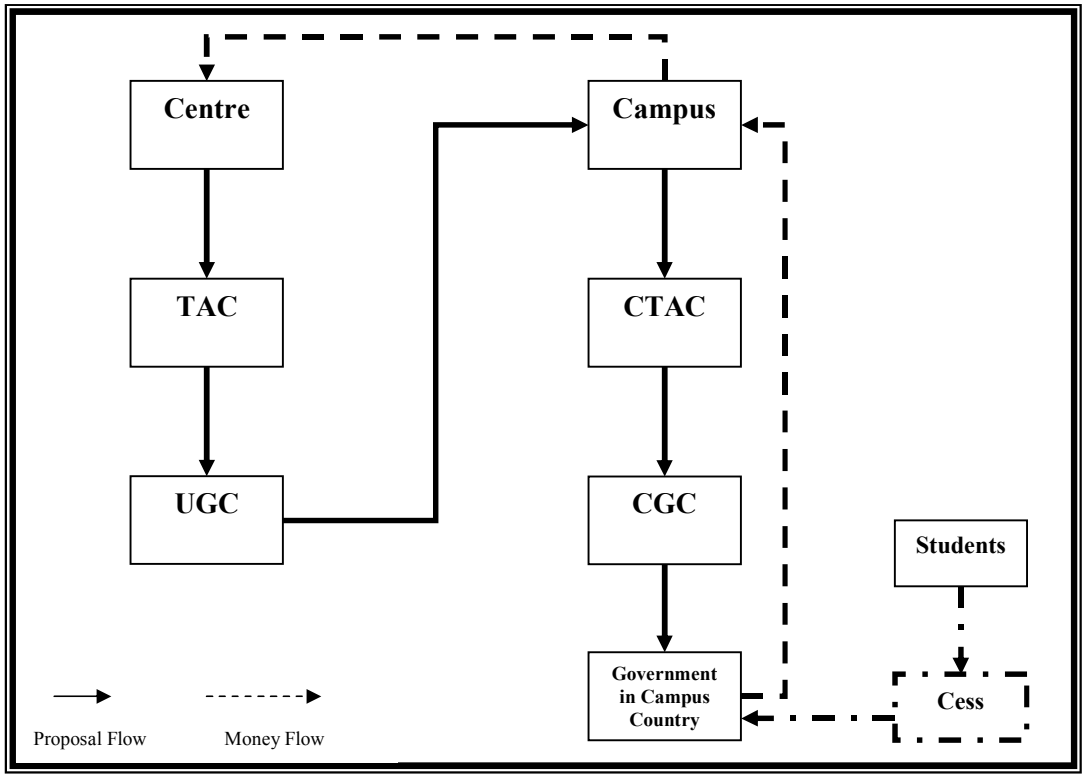
b) Four persons appointed by the government of the campus country;
c) One member nominated by the government of the campus country who has special knowledge of university administration and/or finances;
d) One member at ministerial level from each other campus country;
e) Three members at ministerial level from the NCCs as a group.

The role of the Central UGC (MPC September 21, 1982) was adjusted to be:

i. An examination of the activities of the centre and the funding arrangements for these activities; agreeing on the arrangements for residual funding for the specialised research units
ii. Consultation on matters of mutual interest and on university development in particular. This would include examination of rival claims of Campuses for new developments for which the regional catchment area was necessary for viability
iii. Changes in the number of non-campus students which individual campuses agreed to admit
iv. Cost sharing among campuses of the capital and/or the recurrent costs of new developments in particular cases
v. External funds which create a continuing commitment on the university;
vi. Any other matters related to university development and financing as might be agreed.

An interpretation of the resource allocation process based on the TOR of the central UGC and the CGC and the 1984 structure of the HE system is depicted in Figure 4.7. The Central UGC would examine and approve the expenditure for all the areas of responsibility for the centre. The CGC would do similarly for the campus activities but would in addition incorporate a portion for central cost in its budget. The CGC would negotiate with the government of the campus country, as each would completely finance the costs of the campus in its country as well as the campus portion of central costs. Each CGC had its own advisory committee called the Campus Technical Advisory Committee (CTAC). The campus was responsible for remitting to the centre. The cess was expected to be remitted directly to the GOJ.

Figure 4.7: Resource Allocation Process of UWI, 1984-1994

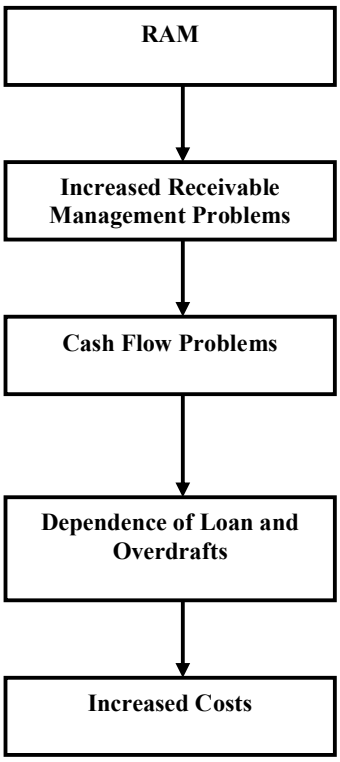


Consequences of the RAM and the Policy of the Cess

The announcement of the cess immediately resulted in massive student protest. Sherlock (1986) reported "On February 19, the day following the announcement, there were students' protests and demonstrations. These continued for 3 ½ weeks. During this period of turbulence work at CAST and UWI was disrupted. There was widespread public discussion and concern". This prompted the Cabinet on April 14, 1986 to set up a task force to review the issue.

The cess was introduced to provide additional funds to allow the government of Jamaica to settle its obligations for HE but did not have such consequence. Instead it exacerbated the financial difficulties of the UWI and CAST. The receivables difficulties worsened and consequently made the institutions illiquid. The UWI, aided by the GOJ thereafter increased its dependence on loans and overdraft to finance the operations. This only resulted in additional cost of operations. Figure 4.8 shows the flow of the financial difficulties experienced by the UWI during the period of the Cess.

Figure 4.8: Financial Problems of the UWI during the Period of the Cess, 1986-1993



The cess also, instead of addressing the receivables management position of the university had the consequence of worsening that position. This can be seen in Table 4.8.

Table 4.8 - Receivable Management Ratios of the UWI during the Period of the Cess, 1986-1993

	Receivables/ Total Income	Receivables/ Governments Contribution	Receivables/ Net Assets	Current Receivables/ Current Assets
1986	35%	53%	26%	63%
1987	68%	99%	50%	81%
1988	73%	106%	50%	84%
1989	83%	117%	55%	81%
1990	52%	77%	39%	80%
1991	54%	75%	44%	79%
1992	68%	96%	52%	83%
1993	64%	85%	53%	75%

The level of income to meet operational requirements was extremely limited. The receivables to governments' contribution ratios showed that in 1988 and 1989 the governments were not even making contributions to cover current commitments. This is further seen from a statement of outstanding contribution which shows that as at March 31, 1988, the GOJ had outstanding to the university a sum of Ja $ 146M of which $39M was for the previous year and the balance was the entire year's assessment of $107M.

Statement of Outstanding Contribution as at March 31, 1988
From the Jamaica Government

Balance outstanding 31/7/87			107,786,932.55
Assessment 1987/88	U.W.I.	98,234,680.00	
	U.H.W.I.	8,588,434.00	106,823,114.00
			214,610,046.55
Payments	Aug-87	12,322,000.00	
	Sep-87	7,500,000.00	
	Oct-87	8,000,000.00	
	Nov-87	7,500,000.00	
	Nov-87	1,250,000.00	
	Dec-87	8,000,000.00	
	Jan-88	8,000,000.00	
	Feb-88	8,000,000.00	
	Mar-88	8,000,000.00	68,572,000.00
			J$146 038 046.55

In 1993 the receivables to government ratio was 85% showing that the source of the financial problem was with the governments, the main source of income for the institution. On February 12, 1985 the Hospital Administrator advised the VC that as a result of the level of indebtedness by the government "for February, the Hospital will not be able to meet its payroll commitments". On May 3, 1987 the Acting VC, L.R.B. Robinson, in a letter to the Prime Minister of Jamaica, linked the financial problems of the university directly to the RAM.

> *I also pointed out that the overall situation had now altered because of the restructured financial arrangements which require the Government of the campus country to advance the funds for the campus…The new 1986/87 commitments of the Jamaica Government required a payment of J$8.5M per month, but payments were initially made for the first four months at the level of J$7.5M and later at the level of J$7M so that at March 31, 1987 the sum owed to the University and the University Hospital amounted to $92M.*

A team from the university met with the Prime Minister on May 21, 1987. In the meeting the Prime Minister promised to liquidate the arrears. One year after the meeting the promise was not fulfilled as the VC reported to the Council May 12, 1988, "the financial situation at Mona remained extremely difficult with the arrears of the Government of Jamaica at a high level and the monthly payments lagging behind the rate required by the agreed assessment under Restructuring".

The worsened liquidity problem resulting from the receivable difficulties are shown in Table 4.9. The cash to net assets position had worsened from an average of 10% in 1986

to 6% in 1993. In comparison to the current assets the cash position had moved from a ratio of 25% to 9%. The ratios show that the institution could not satisfy its short term obligations.

Table 4.9: Liquidity Ratios of the UWI during the Period of the Cess, 1986-1993

	Cash & Short Term Investment/Net Assets	Cash & Short Term Investment/Current Assets	Current Assets/Current Liabilities
1986	10%	25%	437%
1987	5%	9%	232%
1988	4%	7%	267%
1989	4%	6%	287%
1990	3%	6%	215%
1991	3%	6%	212%
1992	4%	6%	220%
1993	6%	9%	191%

The cash flow difficulties led in turn to a dependence on loans and bank overdrafts. Table 4.10 shows that the liabilities not only grew in absolute terms but also as a percentage of expenditure.

Table 4.10 - Liability Situation of UWI and CAST 1974 - 1993

	UWI		CAST	
Year	Short-Term Liabilities	Liabilities/ Total Expenditure	Short Term Liabilities	Short Term liabilities/ Total Expenses
1974	2,994,284	17%	110,271	8%
1975	3,242,499	15%	244,824	14%
1976	2,348,968	8%	236,359	11%
1977	5,815,434	17%	212,982	8%
1978	5,030,805	10%	227,968	8%
1979	8,473,872	12%	n/a	n/a
1980	12,776,028	15%	n/a	n/a
1981	10,285,213	11%	166,158	4%
1982	12,759,464	11%	215,185	4%
1983	18,414,771	11%	291,722	5%
1984	41,735,324	17%	819,813	11%
1985	67,420,698	17%	1,496,166	18%
1986	50,192,102	13%	1,728,766	19%
1987	151,192,883	36%	1,851,900	14%
1988	136,069,335	33%	3,266,063	24%
1989	149,544,698	35%	3,867,441	21%
1990	166,385,940	31%	6,497,693	26%
1991	256,543,833	32%	13,427,794	41%
1992	616,207,462	37%	9,964,493	18%
1993	1,026,600,953	45%	12,438,440	14%

During the free education period the debt to total expenditure had peaked at 17% for the UWI and 19% for CAST. However, during the period of the cess the rate for the UWI was regularly above 30% and peaked at 45% in 1993. CAST peaked at 41% in 1991. In 1991 CAST, contrary to the GOJ's policy, instituted fees and this accounted for the change in 1992. The past President, Dr. Alfred Sangster, stated, "Secondary schools and CAST went slightly through the Machiavellian method because we adjusted the so called ancillary fees to cover the so called fee difference" (Interview November 7, 2003) The Machiavellian method to which the President alluded was the charging of various user fees to the students. The Boich Report (1992) which did an analysis of the institution mentioned several types of fees collected by the institution. These included:

- Part-time fees
- Evening fees
- Identification cards
- General services
- Clinic fees
- Instructional material
- Examination fees
- Laboratory fees
- Sport fees
- Library fees
- Degree Fees

The dependence on loans took the form of bank overdrafts, term loans, promissory notes, suppliers' credits and internal borrowings. Various correspondences during the period illustrate the gravity of the situation as follows:

a) The FS, H.W. Milner wrote to Mr. M.T.A. Payne Deputy Managing Director of the NCB, the University's bankers on December 10, 1986 requesting extension of a credit facility for the institution
b) The MOF again wrote to Deputy Managing Director of NCB on March 23, 1987 requesting an increased overdraft facility of J$5M "pending the release of this amount at the earliest possible date in April. Unconditional and irrevocable undertaking is hereby given to take the necessary action to clear the facility in the event of the UWI being unable to do so."

c) The MOF wrote to PS of the MOE on June 5, 1987, proposing that for the month of June the university again be funded by bank credit.
d) L.B. Smith, the University Bursar, wrote to the Acting VC on June 1, 1988, outlining the increased gravity of the situation and the GOJ's response in securing increased loan facilities.
e) A promissory note, dated April 1, 1989, for J$80,667,000 was issued to the UWI by the MOF with respect to arrears in contribution to be paid in ten equal semi-annual instalments, interest average of six month Treasury Bill rates.
f) Mrs. M. Bucknor, Manager of NCB wrote to Bursar, Mr. L. Smith, on September 15, 1989, informing of the bank's inability to extend further overdraft facility because of lending restrictions imposed by the Central Bank on all financial institutions. The restriction was a condition of the measures imposed by the country's loan agreement with the IMF.
g) Joan McCalla of the Ministry of Finance wrote to Mrs. Bucknor of NCB on October 2, 1989, informing her of the government's decision to convert the overdraft to a term loan.
h) P. Bucknor of NCB wrote on December 27, 1989, confirming the conversion of the facility but noting that the extent of the conversion was insufficient to deal with the total cash flow demands of the university.
i) Karl Davis, Hospital Administrator wrote to FS on September 17, 1987, informing that the cash flow problems had forced the hospital into extended credit arrangements from suppliers
j) The University Bursary recorded on May 20, 1988 that "the result of these short payments is that the Mona Campus is unable to transfer any funds to the other campuses in respect of balances due to them and has had to use its balances of special funds and fixed investments to finance the campus". This showed that funds intended for specific purposes were being directed to assist with the day-to-day operation.

CAST also resorted to Bank overdrafts to support its operation. Dr. Alfred Sangster, the then President of the institution, wrote to the then PS of the MOE, Dr. Rae Davis about the bank overdraft which had grown from J$7,130 in 1981, J$1,331,396 at July 31, 1986 and to J$8,659,572.86 as at March 31, 1991.

The dependence on loans and overdrafts further led to increased cost of the UWI's operations as a result of interest charges, reduced negotiating powers with suppliers and foreign exchange losses on overseas debts. Interest cost moved considerably during the period. Using 1986 as the base year, interest cost had moved by 151% in 1987-88 and by 1992-93 the cost had grown by 2071%. Table 4.11 summarises the trend. In 1986-87 interest cost was 1% of total expenditure. This had moved to 3% in 1987-88 and by 1992-93 it was 4.5% of total expenditure.

Table 4.11 Interest Cost of the UWI: Random Selection of 3 years between 1986 and 1993

	1986-87	1987-88	1992-93
August	7,732.63	863,148.59	3,890,458.37
September	21,584.81	951,396.91	4,562,374.19
October	34,830.56	939,696.94	5,039,003.53
November	-	896,360.38	4,815,993.60
December	79,072.54	975,904.12	5,943,669.09
January	246,171.89	1,044,164.92	8,802,117.27
February	425,151.18	967,097.06	9,800,226.17
March	562,552.72	1,092,133.04	14,215,056.00
April	823,234.15	1,131,093.84	10,248,749.00
May	764,129.90	1,068,626.94	10,214,298.52
June	912,579.22	1,047,202.00	10,675,794.45
July	913,595.39	1,069,018.00	15,804,510.58
Total Interest Charges	**4 790 634.99**	**12 045 842.74**	**104 012 250.77**
Trend Using 1986-87 as base year		**151%**	**2071%**

Karl Davis, Hospital Administrator, in a letter to FS of September 17, 1987, bemoaned the fact that the funding arrangement had resulted in increased cost of operations because the hospital was unable to use its purchasing power to benefit from economies of scale. He pointed out that "this unsatisfactory cash flow position in which the Hospital can only plan on the Ministry of Health's contributions with any degree of certainty deprives the Hospital of price advantages and quality discounts normally associated with the good purchasing practices of goods and services."

Exposure to foreign exchange risk also contributed to the increased cost of operations of a HE system which was extended across national borders and dependent on foreign imports. The VC in his 1992 report stated that "At Mona, where the 1992-93 budget was drawn up on the basis of an exchange rate of J$7 = US$1, the Jamaican dollar has depreciated to

around J$22. Among other things, this has virtually brought the procurement of imported equipment and supplies to a standstill". Again in his 1993 report he reiterated the point when he stated that "the increase payable from August 1992 has been seriously affected by the devaluation of the Jamaican dollar – from approximately J$5 = Bds $1 in 1991 to J$11= Bds $1 in 1992".

During the period of the cess CAST's financial position had also worsened but affected different financial indicators from those of the UWI. See Table 4.12. The areas affected were profitability, reserve levels, liability and working capital.

Table 4.12 - CAST/UTech Financial Results, 1987 - 1993

	Surplus/ (Deficit)	Accumulated Fund	Short Term Liabilities	Working Capital
1987	(415,278)	(2,447,028)	1,851,900	(421,263)
1988	(1,350,753)	(3,797,781)	3,266,063	(1,018,606)
1989	(2,086,098)	(5,883,879)	3,867,441	(838)
1990	(3,804,534)	(9,688,413)	6,497,693	(2,017,526)
1991	(8,044,630)	(17,733,043)	13,427,794	(7,913,115)
1992	3,221,975	(14,511,068)	9,964,493	1,451,531
1993	14,830,332	319,264	12,438,440	22,058,945

The different effect was due to the different RAM. Nonetheless, the effect was negative. The difficulties reached a peak in 1991 where the deficit reached J$8M, the accumulated fund which shows the net worth of the institution was negative J$17.7M, the short term liabilities was $13.4M and the working capital negative J$7.9M. As already mentioned the unilateral position taken by CAST to charge fees was responsible for the improved position since 1992. The difference in the treatment of the UWI and UTech is also seen from a comparison of the two institutions' balance sheets. The manner in which funds were remitted to UTech did not allow it to recognise unpaid amount by the government as receivables hence this resulted in a deficit on the balance sheet. In the case of UWI un-remitted funds were recognised as receivable and hence it has shown surpluses in operations. While CAST/UTech recorded deficits on the income statement and good receivables management ratios, the UWI showed poor receivable management ratio and surplus operation during the period of the cess. The analysis therefore shows that the consequence on un-remitted funds on HEIs results in either deficit operations or poor receivables management ratios depending on how the institution treats non-payments on its books.

The Report of the Chancellor's Commission (1994) concluded that the 1984 RAM resulted starving the centre of needed funds. This was 'because campus governments have adopted the practice of including their contributions to the Centre in the advances which they make to the campuses". The campuses, which were receiving inadequate funds, kept that which they received and left the centre almost impotent. The report also made the claim that the RAM was destroying the regional nature of the university. According to the Commissioners "the pre-1984 financing arrangements were far more suited to the nature of UWI as a regional multi-campus institution than the present arrangements and consideration could usefully be given to a return to arrangement along the lines of the pre-1984 arrangements".

The continued funding of HE on the basis of inputs with the resultant responsibility by the GOJ to determine the salaries of the staff of educational institutions also led to an intensification of the salary parity dispute during the period of the cess. In 1987 the JTA again invoked its long-standing agreement with the government when it learnt that in 1985 the MPS had awarded higher increases to the staff of CAST. The GOJ eventually recanted and awarded similar increases to the academic staff of the teachers' colleges. In May 1990 there was an attempt to end this dispute when the Minister of Education appointed the Sherlock Commission to:

i. Review the principles governing the classification of Jamaica's tertiary education institutions.
ii. Review basic principles governing the classification of staff in these institutions
iii. Recommend criteria for classifying Jamaica's tertiary education institutions and placing existing institutions within the proposed classification.
iv. Recommend a staff structure along with appointment criteria and comparative level of emoluments for the various categories of institutions proposed under (iii).

The majority opinion of Commission was that "the UWI never has been and is not now, a part of the Jamaican tertiary system as far as matters of pay and control are concerned". It therefore recommended that in relation to the Jamaican system there should be a change from the single level tertiary education system and that the division be used to establish the hierarchy of salary payments (hence funding) to the institutions. They further stated that

"regardless of UWI, there is now justification for recognizing three levels of the Jamaican educational system for the purposes of pay" (ibid 94). Those should be as follows:

1. University/Polytechnic Level, where "the fully qualified lecturer would be required to have teaching experience, research skills and to provide evidence of the capacity to generate knowledge. The duties and responsibilities would be shared between teaching, research, the training of researchers and writing for publications.
2. College/Polytechnic Level, where "…the fully qualified lecturer is required to have a university degree, professional training and five year' teaching experience. The duties are mainly related to teaching."
3. Primary and secondary schools, where "…the requirements of the fully qualified teacher is for professional training either at the graduate or undergraduate levels. No experience is necessary for appointment."

Mr. Hector Wynter offered a minority opinion which stated that it was illusionary to believe that the UWI is not a part of the Jamaican system. He recommended that there be five levels in the system, namely

Level 5 - University of the West Indies

Level 4 - Polytechnic – offering specialized bachelors' degrees and some masters' programmes in addition to professional courses

Level 3 - College 11 – offering bachelors' degree programmes in addition to diplomas and certificates

Level 2 - College 1 – offering certificate and diploma programmes

Level 1 – Secondary and primary schools offering schools leaving programmes

The minority opinion was therefore to extend the hierarchical structure of the Jamaican educational system and continue funding accordingly. The majority position, however, was to establish a clear definition of HE, criteria for entering that arena and use the movement in that arena as the basis for attracting increased funding. It was on the basis of the majority view that CAST was accepted by the GOJ as a HEI and granted its Charter as of September 1, 1995.

The RAM had also resulted in a salary parity dispute within the UWI system itself. The minutes of the Finance and General Purposes Committee (F & GP) meeting of the UWI, 30th May 1988, reported that at the visit of a delegation to the Prime Minister of Jamaica

"the opportunity was taken to raise the issue of the low salaries being paid at the Mona Campus and to request that the most favourable consideration be given to upgrading the terms and conditions of staff". The matter was eventually settled when the West Indies Group of University Teachers (WIGUT) successfully negotiated with the MPS salaries for the staff at Mona that would peg them to rates offered on the other campuses of the University. E.G. Marshalleck, PS, MPS on 20th February 1991, confirmed the position and outlined the immediate consequence whereby the Jamaican Government was required to increase its funding commitment. This was unexpected and exacerbated the country's financial problems.

The threat to the quality of the medical programmes continued to be a consequence of restricted and uncertain funding as was pointed out to the Prime Minister by members of the Mona Campus Council on May 20, 1988. The VC also alluded to poor quality of the university's programmes as a result of funding in his report dated March 17, 1989, when he stated that "the instability and uncertainty which now prevail reflect themselves in a run-down physical plant, an accumulation of unfilled vacancies, grossly inadequate library facilities and very poor student amenities." Infra-structural neglect also resulted from the system of funding which depended totally on the host campus government to fund capital/infra-structural development. The Acting VC, L.R.B. Robinson pointed this out to the Prime Minister on 3rd May 1987. The VC, in his report, March 17, 1989, stated that "the instability and uncertainty which now prevail reflect themselves in a run-down physical plant."

In addressing the plight of CAST to the then Permanent Secretary of the MOE regarding the effects of the RAM on the institution, (May 3, 1991) the then President noted that, "no allocation has been made for capital expenditure for CAST for several years. In the meantime, the institution has had to be replacing equipment and adding new ones. The rapid development in computing over the past several years has rendered equipment obsolete …" (May 3, 1991)

It is seen from the analysis of the enrolment figures of the UWI that the Cess did not seriously affect the enrolment growth of Jamaicans to HE. See Table 4.13. By 1992-93 the growth rate relative to 1963-64 had recovered to 20%. It fell for the first year and then

started recovering thereafter. The documents reveal that the reason for the decline in the first two years was due to capacity constraints rather than cost to the students.

Table 4.13 - Enrolment Growth of HE during the Period of the Cess

	Jamaicans at UWI			UWI			
	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963-64	Year to Year Growth	Cumulative Growth	Average Rate Relative to 1963-64	Number of Years
1985-86	-4%	429%	19%	1%	390%	17%	23
1986-87	-3%	411%	17%	1%	393%	16%	24
1987-/88	6%	443%	18%	7%	426%	17%	25
1988-89	6%	474%	18%	3%	444%	17%	26
1989-90	5%	506%	19%	2%	457%	17%	27
1990-91	6%	543%	19%	4%	477%	17%	28
1991-92	4%	572%	20%	6%	512%	18%	29
1992-93	4%	598%	20%	5%	540%	18%	30

COST SHARING 1993 – PRESENT

As at September 1, 1993 the GOJ accepted the policy of cost sharing for all educational institutions from the secondary level. By so doing it gave sanction to what existed because several institutions out of desperation started charging fees under various guises. As pointed out before, after the policy was announced, the government sought to develop regulations for its governance. In June 1994 the MOEC published a document entitled "Policies and Procedures for Administering the Cost Sharing Scheme for Financing Secondary Education" and in October 1994 it received the Davis Task Force Report entitled "A Cost Recovery Programme for Tertiary Education". This was intended to govern the tertiary sector. The Davis Task Force Report (1994) made several recommendations and though there is evidence that many aspects are in current practice there is no common convention or official pronouncement on the policies and procedure for the tertiary system.

A review of the cost sharing policy must take into consideration the development that occurred during the period of CAST being officially upgraded to a university. This move was a direct outcome of the majority position of the Sherlock (1991) Report which recommended that the national tertiary system be two-tier. The Hon. Burchell Whiteman, Minister of Education, announced to Parliament that "As of September 1, this year, the College of Arts Science and Technology (CAST) is to be designated the National

Polytechnic University" (Daily Gleaner, May 11, 1995). CAST was thereafter renamed the University of Technology, Jamaica (UTech) and the main objects according to the Charter were to:

a) Advance education and develop technology through a variety of patterns, levels and modes of study and by a diversity of means
b) Preserve, advance and disseminate knowledge and culture through teaching, scholarship and research

As at September 1, 1995, therefore, the GOJ was committed to support two HEIs with the same mandate.

Features of Cost Sharing

The bases for the cost-sharing programme for the tertiary level were contained in the Davis Task Force Report of 1994, which stated that:

i. Funding of tertiary education was regarded as a shared responsibility between the state, corporate sector, students and educational institutions
ii. The state, as the major partner would continue to provide a significant portion of the funds and would be responsible for creating policies to facilitate the participation of the other partners
iii. The state would ensure the most effective use of HEI's resources and equity in the allocation of available benefits

To ensure that access was not denied to needy students the GOJ entered into a US$38.5M project with the World Bank (World Bank Report 1996, 15594-JM) to:

a) Provide Jamaican students (especially the neediest) with adequate financing options to pay for their share of higher education on an ongoing basis
b) Increase equitable access to tertiary education and improve targeting of sub-loans
c) Increase financial sustainability and administrative efficiency of the SLB through a consolidated student loan program

A component of the World Bank Project was the provision of US$8.5M for a programme to provide funds for accommodation, maintenance cost and books. According to the Report "the project will also support a targeted grant scheme for full-time UWI and UTech students only to help meet a share of outlays not covered by sub-loans for students from

low-income families"(ibid). Qualified students receive a grant of J$35, 000 per annum. The distinguishing features of the cost sharing policy for tertiary education in Jamaica were therefore:

a) Shared responsibilities for HE costs
b) The state to provide major contribution and the regulatory framework
c) Assistance was to be provided for the most vulnerable in the society by way of loans and grants

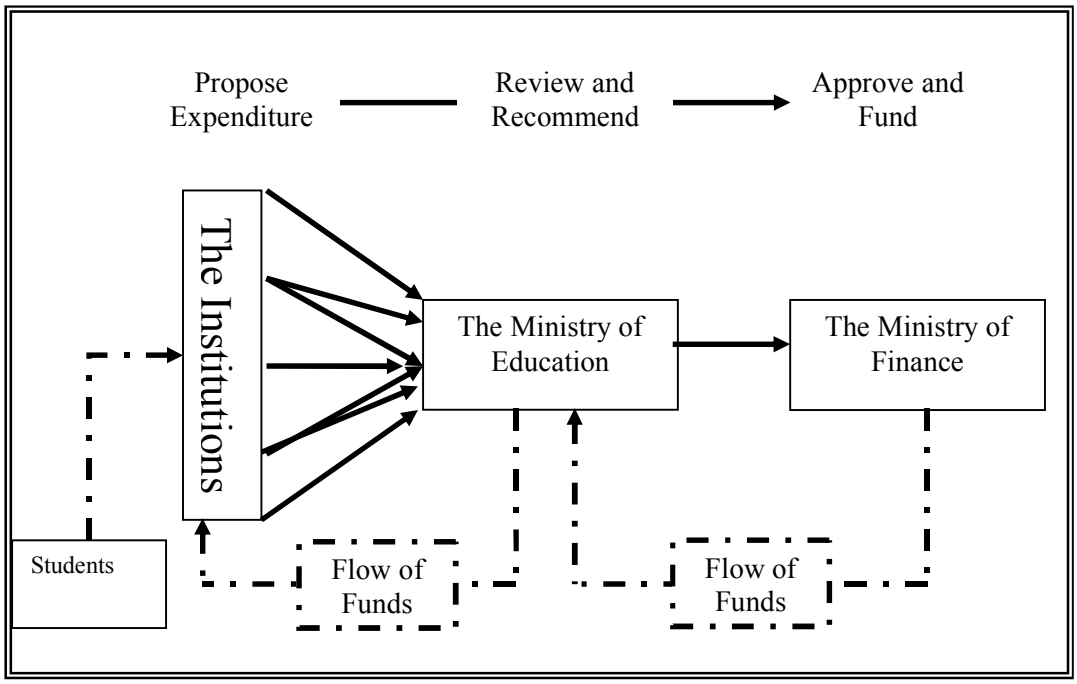
RAM during Cost Sharing

The RAM under Cost Sharing is a three-phase process, namely:

i. Determining the total resource requirements
ii. Deciding on the portion to be provided by government,
iii. Determining the students' portion

The Davis Task Force Report (1994) noted that there were two separate arrangements for determining resources to the TLIs in Jamaica - one for the UWI and another for the national tertiary institutions. Notwithstanding UTech's elevation to a HEI, the process for allocating resources to that institution remained the same as with the other TLIs. The process is depicted in Figure 4.9

Figure 4.9: - Resource Allocation Process for Jamaican TLI since 1993



The institutions continue to make their annual submissions to the MOEC which would review and recommend expenditure support to the MOF. The submissions were based on each institution's strategic plan.

Government provided funds to the national TLIs as per a pre-determined organisational structure and pay levels. There is no technical basis for determining non-academic staff requirements; however, the academic staff numbers are theoretically determined by a student/staff ratio of 12.5. There is no mechanism for reviewing the enrolment statistics with a view to adjust the provisions. For example, in 1997 the MOEC accepted and based its provision for UTech on the Chardale Report which established the organisation structure and personnel requirements of the new university. In 2005 funds continue to be allocated to the institution based on the 1997 organisational structure though the institution had changed considerably since.

The students' portion was expected to cover the other operational costs and salaries for staff not recognised by the MOEC. The institutions proposed the fees and "the Ministry endorses fees after dialogue with the institutions" (Davis 1994). Since 2002 UTech has charged fees based of a percentage of economic cost for each faculty as per Table 4.14.

Table 4.14 - UTech's Bases for Tuition Fees since 2002

	2002/2003	2003/2004	2004/2005
Business Management	45%	45%	50%
Engineering and Computing	27.5%	27.5%	28.5%
Built Environment	23%	27.5%	28.5%
Health and Applied Sciences	27.5%	27.5%	28.5%
Education and Liberal Studies	17.5%	17.5%	18.5%

Since the GOJ's portion is not determined on the PCC basis then UTech varies the percentage of economic cost based on the gap that is required to be filled. This accounts for the year to year variation in the percentages.

It is to be noted too that UTech used a variant of Activity Based Costing (ABC) Technique called "Multiple Factor Cost Allocation (MFCA) Model" to calculate its economic cost. This model uses several factors to allocate the shared costs and it also distributes costs for

interfaculty teaching as outlined in Table 4.15. See Appendix XV for details of the methodology.

Table 4.15 - Bases for Allocating Shared Costs at UTech

Shared Service	Allocation Factors
Service Teaching	Teaching Hours
Finance and Administration	Number of Personnel (Staff and Students
Library	Full Time Equivalent Students
Human Resource Development	Staff
Plant Maintenance	Floor Space

The formula used by UTech for calculating the economic cost is as per equation 4.11.

$$PCC_f = \{\sum(SC * W_c) + FC_f\} / E_f \qquad (4.11)$$

Where SC = Shared costs for services

W_c = Weight for distributing the particular shared costs

FC_f = Faculty direct costs

E_f = Full time equivalent enrolment for the faculty

PCC_f = Per capita cost per faculty

The formula for determining the tuition fee for the students of UTech is therefore faculty specific and is as per equation 4.12

$$P_f = X_f\% * PCC_f \qquad 4.12$$

Where P_f = Tuition fee student per faculty

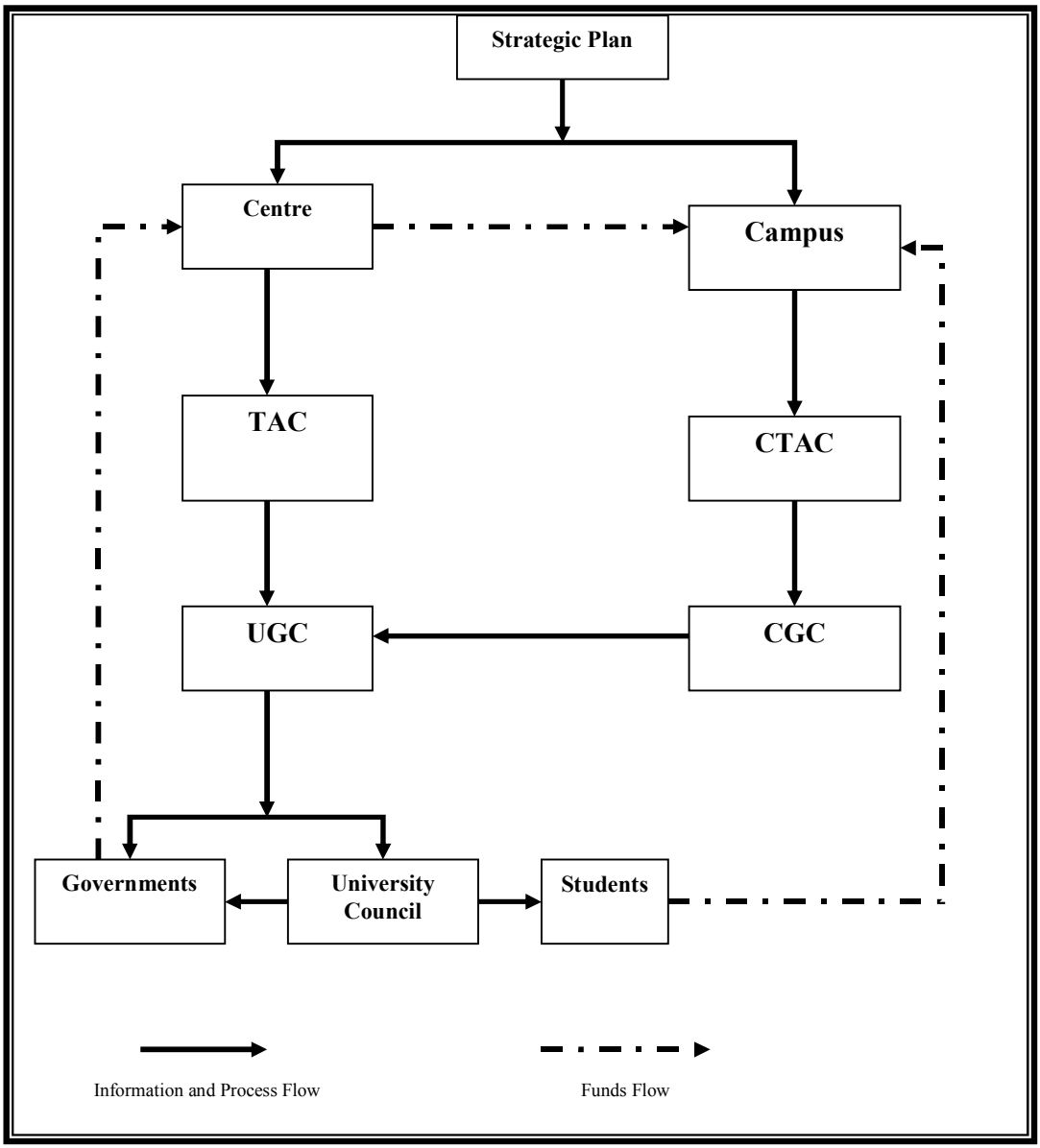
X_f = Faculty percentage

In the case of the UWI the process follows a different path as per Figure 4.10 Planning the resource requirements for the centre and the individual campuses is done separately, however the institution's strategic plan is expected to provide the direction. The resource requirements for the centre are first submitted to the TAC for review. The TAC then recommends the total budget to the UGC for approval. The requirements for each Campus are routed to its CTAC for detailed review. The CTAC would then recommend to the CGC which would again consider and make a final recommendation to the UGC. The UGC is responsible for approving both the centre budget and those of the campuses. It would then convey its decision to the respective governments and to the University Council. The governments are expected to be bounded by the decision of the UGC and the

Council approves the fees to be charged to students. The decision re fees is then conveyed to both the sponsoring governments and the students.

Another difference that was identified between the RAM of the national institutions and the regional one was the sequence in the process. The secondary step in the national system was the determination of the government's provision but in the regional system the next step was determining the students' share of the cost. This observation is important as will be explained in the section on consequences.

Figure 4.10: Resource Allocation Process for the UWI 1994 to 2004



The formula for calculating economic cost for the UWI remained as per equation 4.9.

$$\mathbf{PCC_{fm} = (SC/E) + (SC_m/E_m) + (FC_{fm}/E_{fm}) \quad (4.9)}$$

In 1995, however, there was an improvement in the methodology as recurrent costs resulting from capital investments were included in the calculation. Depreciation and amortisation charges which were previously ignored were therefore included in the costs.

Tuition fee for the UWI student was established as an institutional percentage of the PCC as per Equation 4.13.

$$\mathbf{P_f = X\% * PCC_f \quad 4.13}$$

Where P_f = Tuition fee student per faculty

X = Institutional percentage

The original intention was that "the fee should be set at a level of 10% of economic cost for the academic year 1992-1993 and 15% of economic cost for the triennium 1993-94 – 1995-96" (Committee on Tuition Fees Report 1991). The Government of Jamaica had hoped to incrementally increase the percentage contribution to a maximum of 35% by 1999 but in 2005 the maximum contribution for students for that institution was less than 20%.

The third step in the RAM for the UWI was determining the governments' portion. This was gleaned from recommendation no. 6 of the Report of the Implementation Committee of the Commission on Governance which stipulated that after the students' proportion was determined "Government should fully fund the remaining costs" (November 24, 1995).

Consequences of the RAM and the Cost-Sharing Policy

The cost sharing policy led to improved financial performance of HEIs. This is seen from an assessment of the profitability ratios as presented in Tables 4.16 and 4.17. UTech which implemented cost sharing before the official pronouncement began showing positive results since the 1991-92 academic year where it recorded a surplus to income ratio of 6%. This was a reversal of a ten-year-old trend of deficits. During cost sharing there has been consistent surpluses averaging 12% per annum for the period. This should be regarded against the negative returns of the three previous periods. Cost sharing has also improved

the working capital as it moved from a negative $7.9M in 1991 to positive $39M in 2003. The positive returns for UTech's first two years of cost sharing, 1991-1993, accounts for the positive average for the 1986-93 period. Table 4.16 shows that when 1991 was used as the beginning of cost sharing, UTech incurred an average deficit of JA$3.1 for the period of the Cess. The accumulated fund had also declined by an average of $3.5M p.a. and the working capital by $1.6M.

Table 4.16: - UTech's Financial Results since Cost Sharing, 1994-2003

	Surplus/ (Deficit)	Accumulated Fund	Working Capital	Surplus (Deficit) /Total Income
1994	26,620,681	26,939,945	64,389,935	15%
1995	18,607,808	45,547,753	93,073,167	9%
1996	20,057,729	32,739,778	89,341,336	5%
1997	21,364,664	35,944,478	78,019,065	4%
1998	31,047,878	1,126,114,253	67,621,218	3%
1999	306,945,640	1,156,808,817	65,369,434	29%
2000	77,214,180	1,182,897,053	75,962,892	11%
2001	138,997,788	1,288,191,632	22,045,503	13%
2002	222,085,129	1,355,863,714	64,434,945	18%
2003	169,791,260	1,381,711,093	39,341,776	11%
Average 1963-73	(8,040)	1,282	9,105	-1%
Average 1974-86	(200,076)	(156,288)	(30,484)	-3%
Average 1987-91	(3,140,259)	(3,546,609)	(1,582,623)	(0)
Average 1987-93	335,859	45,609	3,151,278	-6%
Average 1994-2003	103,273,276	138,171,109	3,934,178	12%

The UWI did not embark on the cost sharing route as early as UTech and has not shown a comparable level of return. Table 4.17 shows that it had a 3% average annual surplus return for the period as against 1% for each of the two immediate periods. Cost sharing has also reversed the previous 10 years of negative accumulated fund thereby resulting in a positive net worth for the university. It was during this period that the UWI recorded its highest surplus being J$1B in 2000 and J$92M per annum average growth. The working capital also grew by $1B per annum, the best in the institution's history.

Table 4.17 – The UWI Financial Results since Cost Sharing

	Surplus/ (Deficit)	Accumulated Fund	Working Capital	Surplus (Deficit) /Total Income
1994	26,477,190	(22,344,805)	60%	1%
1995	0	23,971,235	25%	0%
1996	(809,115,801)	38,634,837	30%	-19%
1997	46,197,759	73,452,147	29%	1%
1998	934,718,073	326,638,371	11%	12%
1999	940,824,965	359,786,787	18%	11%
2000	1,064,529,069	528,600,756	12%	11%
2001	966,474,001	554,024,989	17%	9%
2002	532,573,787	1,056,920,589	10%	4%
2003	(107,307,687)	923,033,399	27%	-1%
Average 1963-73	320,552	(21,300)	227,640	5%
Average 1974-86	810,619	(77,912)	12,999,662	1%
Average 1987-91	4,407,633	(8,069,807)	147,6333,376	
Average 1987-93	7,709,205	(2,845,924)	133,336,352	1%
Average 1994-2003	359,537,136	92,303,340	1,085,054,885	3%

Cost sharing has also resulted in better management of receivables, which suggests that it is easier to manage students' receivables than that from Governments. The average of students fees to total income for the UWI for the pervious periods were 4%, 2% and 2% respectively. For the cost sharing period the ratio was 12%. The receivable management ratios for the end of each of the four periods were as per Table 4.18.

Table 4.18: Comparison of UWI Receivable Management Ratios

Ending Year	Periods	Current Receivables /Total Income	Receivables /Governments Contribution	Receivables /Net Assets	Current Receivables /Current Assets
1973	Fee Paying	11%	15%	4%	43%
1985	Free Education	36%	57%	28%	76%
1993	Cess	64%	85%	53%	75%
2003	Cost Sharing	46%	82%	27%	46%

An analysis of the period 1994 to 2003 shows considerable improvements except for 2003 when the benefits seem to have been reversed. When further observed it was noted that again outstanding contribution from the GOJ was largely responsible for the accounts receivable moving from J$3B to J$6.8B. Jamaica was outstanding for its entire commitment for 2003 which was in excess of J$2B. The other governments had also increased their receivables by $1B. This supports the point that had the institution been

more dependent on students' contribution the problem could have been better handled. When 2003 is excluded from the analysis then it can be seen that cost sharing had in fact been beneficial for the receivable management of the institution. The receivables to total income ratio declined from 64% to 24% and 14% to net assets as shown in Table 4.19.

Table 4.19: Receivable Management Ratios of UWI 1994 - 2003

	Current Receivables /Total Income	Receivables /Governments Contribution	Receivables /Net Assets	Current Receivables /Current Assets
1994	81%	134%	40%	86%
1995	56%	89%	29%	77%
1996	52%	93%	25%	71%
1997	45%	64%	25%	66%
1998	27%	40%	18%	50%
1999	46%	75%	26%	57%
2000	32%	53%	18%	45%
2001	35%	57%	19%	66%
2002	24%	42%	14%	30%
2003	46%	82%	27%	46%

The ratios show that as the institution increased its dependence on government its ability to manage its receivables decreases and as it reduces its dependence its ability improves. This conclusion is further supported by a comparison between the two HEIs. UTech that embarked earlier on cost sharing has had far better receivable management ratios as can be seen from a comparison between tables 4.19 and 4.20. The difference in treating unpaid commitment from government should again be noted. Previously, it was pointed out that, this difference affected the profitability ratios rather that receivable management for UTech. During cost sharing, however, the profitability ratio was not affected because there was less dependence on the government. This is shown in Table 4.16.

Table 4.20: Receivable Management Ratios of UTech 1994 - 2003

	Current Receivables /Total Income	Receivables /Governments Contribution	Receivables /Net Assets	Current Receivables /Current Assets
1994	9%	19%	25%	24%
1995	7%	15%	17%	17%
1996	5%	9%	18%	18%
1997	4%	7%	14%	17%
1998	4%	6%	3%	32%
1999	4%	6%	3%	30%
2000	18%	33%	8%	61%
2001	10%	19%	6%	51%
2002	7%	13%	4%	48%
2003	7%	15%	5%	52%

Cost sharing has also resulted in a change in GOJ/University relationship. Under the previous RAM, the GOJ was directly responsible for negotiating with the staff of the UWI. The salary parity dispute within the UWI across campuses and national borders resulted in a settlement for which the GOJ was unprepared. The GOJ had incurred an additional commitment outside the budgetary process of the UWI. This was noted in the financial report given to the F & GP Committee meeting of June 26, 1995 (FGP (M) 119). In its cost sharing decision for the UWI taken on October 31, 1994, Cabinet "…decided that the Government would no longer enter into wage negotiations with WIGUT, but would allow the unions to carry out negotiations with the UWI.." The working group of the Chancellor's Commission on Governance dealing with Finance and Planning reported that it had examined the paper "Government of Jamaica's Proposal regarding future funding for the University of the West Indies" and had noted that "the paper describes the University as a producer and governments as purchasers, each party having specific and explicitly stated obligations. It is proposed by this paper that the UWI must assume full responsibility for negotiating its input costs such as labour and bank financing" (MA 02.20, Nov. 24, 1995).

Attempts have been made in the University of Technology Act 1999 to capture the distinct government/university relationship in Section 6-(1), which stipulates that it is only on the Council's recommendation that the Minister can give directions of a general nature. Section 7-(1) of the act also made the point that it is the university's responsibility to employ and decide on the remuneration of its staff. There is, however, the stipulation that such remuneration should not be above the prescribed limit set by the minister.

Notwithstanding the new government/university relationship, which emanated from the cost sharing policy, there emerged a new dimension to the salary parity dispute. This results from the lack of a uniform mechanism of allocating resources to HEIs and the two-tier practice of treating the regional HE institution differently from the national one. Recall that the resources are provided to UTech only for staff costs and the UWI for a percentage of its overall costs. The GOJ is represented on the negotiating team with the UWI administration against its staff and leads the UTech's negotiation team. With the implementation of Sherlock (1991) there is no longer the issue of UTech staff being paid on the same level with the other national TLI, however, the question now is, "why with the

same mission and mandate, should UTech's staff be paid lower salaries than its counterparts at the UWI?"

The Hon. Maxine Henry-Wilson attributes the current disparity in favour of the UWI to the higher qualification of its staff, the different functions being performed and the better negotiation skills of its union. As stated by her:

> *To some extent, what we have now in terms of disparity, relates to qualifications that were required and years of involvement in teaching, research and publication. The UWI, of course, places much emphasis on publishing. Affecting salaries is the negotiation by the union representing the academic staff. There is a negotiating union for the UWI and they have claimed that as a regional institution they therefore must have equity in terms of salaries across the region but also they are benchmarking the UWI against certain Universities in North America and England because they want to see themselves as comparable and would like to recruit the best from outside to come in. It depends on what is negotiated and at the moment there is a great disparity with what the UWI gets, primarily because of negotiation but also because of the model they are using. It's the benchmark against the region and against the kinds of qualification that is significant.* (Interview, February 13, 2004)

The Hon. Omar Davies also opined that the difference in treatment is due to the skills of the UWI negotiating team which uses the regional mandate to its advantage.

> *The UWI has always had a special/peculiar position because it is a regional institution and it utilizes that regional background to its advantage (not surprisingly so) I suspect that for whatever reason, as a regional institution, they will want to preserve it as that. There are going to be differentials not only in terms of salary levels and how it is dealt with.* (Interview, February 20, 2004)

Elaine Robinson pointed out that the UWI has used the strategy of coupling research and teaching to contract its staff and negotiate its salary level. According to her:

> *The UWI is in a unique position being the only research institution, really, in Jamaica. I think the other institutions might be getting there – but we are funded as a research institution. It therefore means that essentially, we do not get any additional funds from the government specifically identified as research – our research is really built into our staff allocation in terms of work so an academic staff person is allocated a certain number of hours for teaching and research and is expected to allot a substantial amount of the summer period towards research so the salary structure really has built into it the research type and element in terms of cost.* (Interview, November 18, 2003)

She further stated, when pressed for a comparison with UTech, "I do not know if I am comparing apples with apples but I believe the salaries paid here are on the basis that the UWI is a Teaching/Research institution."

Dr. Rae Davis and Dr. Alfred Sangster, President and past President of UTech, both opined that the system needs to recognise and support change. According to Dr. Davis:

> *So here again the model that we are working with now which acknowledges the UWI to be at the pinnacle of the system and therefore based on that they enjoy the highest level within the tertiary system and they work their way down from there. The landscape has changed – apart from CAST being upgraded to a university (being the first major shift) they have a number of tertiary level institutions running university courses and if they are going to be allowed to do so then the quality assurance which we have embraced will certainly have something to say about quality of the staff and its programmes. In order to run degree programmes you need to have qualified people – so I don't see how we are going to say because you are from UTech or of a particular College you are locked into this salary level. The model of determining salary on the perception of the levels of the institutions has to be revisited.* (Interview, November 13, 2003)

Dr. Alfred Sangster stated:

> *What I do know is that the UWI has always had a favoured position in funding by the GOJ and Caribbean Governments so they have tended to have much higher salaries, much more privileged position and are now seriously challenged by a variety of circumstances. UTech is now on stream, NCU is a challenge, Nova, Manchester Business School and all the other institutions are challenging the UWI's MBA programme. So all of these are making the UWI wake up to the realities and that waking up process is being transmitted to the policy makers…Is the University giving us value for money"? Those are issues that are now causing the paradigm to shift.* (Interview, November 7, 2003)

The GOJ inaction in completing the policy framework for cost sharing has also resulted in inequity in the distribution of the resources. Recall that there is a difference in the steps to determine the resource allocation to the Government and the students. In the case of the UWI the step after identifying the total resource requirement was to determine the amount to be absorbed by the students depending on whether the HEI is regional or national. For UTech the second step was that of deciding on the Government's portion. The difference in approach has led to the difference in the sharing proportions. The Davis Task Force Report (1994) has suggested that pending the rationalisation of the tertiary system "the fees for students at the UWI (Mona) should constitute a reference point for determining fees for national tertiary institutions" (ibid. 14). Cabinet had decided (Cabinet Decision No. 41/94) that for the UWI the following should be the targets in relation to students' fees:

a) 15% ratio in September 1995
b) Increase to 25% of economic cost in September 1996
c) Thereafter effect annual incremental adjustments of 5% up to 35% of economic cost.

It would therefore mean that 35% of the economic cost should have been the UWI students' contribution since 1998 and if that was taken as the benchmark, then 35% of economic cost should have been the contribution of all students in the entire tertiary education system since 1998.

The reality has been that the students of the UWI (Mona) have not yet attained the 35% limit. In 2004-2005 they were contributing below 20% of the economic cost. The GOJ has supported the Council in going back on its decision of October 31, 1994. The minutes of the meetings of the Council April 1999, 2000 and 2001 revealed that in each year the council decided against the 1994 targets of the GOJ for the students' contribution. Paper C.P. 6 which was accepted as setting the new basis for charging fees informed that for 2001-2002 the fees agreed on represented 18.4% economic cost. UTech on the other hand which approached the setting of fees as the final step of the resource allocation process has been able to set fees up to 50% economic cost, thereby surpassing the target intended by the GOJ. This was shown in Table 4.16.

The different bases for allocating resources have also resulted in different methodologies for calculating economic cost. Details of UTech's are explained in Appendix XV. The UTech model seeks to capture costs where there are incurred while the UWI is more concerned with a basis for determining tuition fees. As such it is unconcerned about the distortion created by cross subsidisation whether across national boundaries or faculties. This raises the question of whether the model results in the calculating of "economic cost" or that it is a pricing mechanism.

The RAM has also led to a lack of focus on the funding for research. This consequence is linked to the new salary parity dispute and the coupling of research and teaching for the staff of the UWI. It follows that if the salaries are determined on the basis of experience and qualification of the current staff and further that if current staff of one institution were recruited for the dual purpose of research and teaching and the other institution had recruited only for teaching then funding would not be provided for the latter for research. The process of the RAM for the national system has therefore resulted in a lack of focus on the funding of research.

The Hon. Dr. Omar Davies (Interview, February 20, 2004) believes that the problem is not for the Government to solve but for the market to settle. The following exchange in the interview with the Minister of Finance brings out the point.

> *Q. Any thoughts on the funding of research in Jamaica – we don't separate funding of research in the case of the UWI everything is lumped together but in the case of UTech, they do not get anything for the funding of research.*
>
> The Minister's Response:
>
> > *Well, your question betrays the problem. The assumption is that, this is government's responsibility. I believe that government should make a contribution to basic research but I think there is a more fundamental problem. If you look in the United States or Canada – a large percentage of research is funded by the private sector. Now we have two issues*:
>
> - *Are the tertiary institutions aggressive enough in structuring their research to reflect what is needed in the private sector, whether it is in agriculture or mining etc.?*
> - *Is there something we need to do to increase the appreciation of the private sector for the value of research?*
>
> *But, one of my difficulties in dealing with lecturers at a University – be it UWI or UTech, is the notion that this is government's responsibility. Interestingly, Northern Caribbean University (NCU) may not be of the same opinion because they are not the descendants of the government funding. They are much more aware of the need for them to do something which is more relevant, what someone should pay for. That's my viewpoint – as I say the question betrays one of the deficiencies in the approach to tertiary education.*

The period of cost sharing has seen the most rapid growth in enrolment in HE in Jamaica. See Table 4.21. The growth is linked to the resolution of the first salary parity dispute. The encouragement to improve the salary level has pushed the staff of CAST to upgrade its offerings in order to ensure that they were shifted to the HE category. This has shown that access can best be improved with more institutions entering the arena. The average per annum growth rate relative to 1964 is 43%. The growth rate for Jamaicans in the UWI has also increased from 20% average in 1993 to 23% in 2003. The data showed that access is more dependent on capacity rather than fees. When the cess was introduced the growth declined in the first two years because of capacity constraint. This is supported by the fact that the decline started before the cess when it shifted from 21% in 1984/85 to 19% in 1985/86. During cost sharing (fee) there was a phenomenal growth because more institutions entered the HE arena thereby building capacity.

Table 4.21: Enrolment Growth in Government Supported HEIs in Jamaica, 1986-2003

	Jamaicans at UTech	Jamaicans at UWI	Total Jamaicans in HEI	Jamaica Average Rate Relative to 1963/64	UWI Average Rate Relative to 1963/64
1964		907	907		
1986		4,802	4,802	19%	17%
1987		4,634	4,634	17%	16%
1988		4,922	4,922	18%	17%
1989		5,209	5,209	18%	17%
1990		5,492	5,492	19%	17%
1991		5,835	5,835	19%	17%
1992		6,093	6,093	20%	18%
1993		6,333	6,333	20%	18%
1994		6,632	6,632	20%	19%
1995	6,374	7,055	13,429	43%	19%
1996	6,770	7,710	14,480	45%	20%
1997	7,102	7,883	14,985	46%	21%
1998	6,579	8,608	15,187	45%	22%
1999	6,055	8,646	14,701	42%	22%
2000	7,550	8,632	16,182	46%	22%
2001	7,375	8,488	15,863	43%	21%
2002	6,733	8,449	15,182	40%	21%
2003	7,187	9,161	16,348	43%	23%

SUMMARY

The findings on the funding policies and mechanism embarked on by the GOJ are hereunder summarised.

1. Fee paying Era
   1.1. Financing Features
      1.1.1. The Governments of the region funded only one HE institution (UWI).
      1.1.2. Students made a small contribution towards recurrent cost.
      1.1.3. Support was available to needy students in the form of scholarships.
      1.1.4. Loans emerged as a form of support for needy students.
   1.2. RAM
      1.2.1. The UGC was established as the intermediate body to determine and channel the resources from the supporting governments (several sources) to the UWI (one recipient).
      1.2.2. The funds were provided as blocked grant.
      1.2.3. The levy ratio was used to distribute the recurrent expenses to the supporting governments

1.2.4. There was no set formula for sharing the costs of the non-recurrent items

1.2.5. The national TLIs were allocated blocked grants as per negotiation with the MOE for both recurrent and capital expenditure

1.3. Consequences

1.3.1. Dissatisfaction of supporting governments with the levy ratio

1.3.2. Under-funding for capital development

1.3.3. Internal efficiency of HEI questioned

1.3.4. Challenge to academic independence

1.3.5. Access rate deemed too low

2. Free Education Period

2.1. Changes in Financing Features

2.1.1. Abolition of fees for HE students

2.1.2. Boarding Grants provided for all HE students

2.1.3. Expansion to the SLB to provide loans for educational related expense

2.2. Changes in RAM

2.2.1. Students were not a part of the RA system

2.2.2. PCC replaced the levy ratio as the mechanism for distributing the expense to the supporting governments of the HEI

2.3. Consequences

2.3.1. HE access increased but at a reduced rate

2.3.2. Capital/infrastructural neglect

2.3.3. Receivable management difficulties for the HEI

2.3.4. Economic difficulties for Jamaica

2.3.5. Threat to the accreditation of the medical faculty

2.3.6. Billing disputes between HEIs and Jamaica

2.3.7. Inputs aspect of the funding methodology caused the salary parity disputes within the teaching profession in Jamaica

2.3.8. Redirecting of needed resources from the primary and secondary levels to HE

3. The Period of the Cess
    3.1. Changes in Financing Features
        3.1.1. Students paid a tax that was pegged to the economic cost of their education
        3.1.2. The cess was restricted to students of two tertiary level institutions
        3.1.3. Abolition of automatic boarding grants for all students
    3.2. Changes in the RAM
        3.2.1. Devolved system where the campus had the control of the resources
        3.2.2. CGC responsible for determining campus resources
        3.2.3. UGC restricted to determining resource requirements for the university centre
        3.2.4. Campus government responsible for total financing of the campus located in its country
        3.2.5. Campus administration provided resources for centre
        3.2.6. PCC was calculated per campus
    3.3. Consequences
        3.3.1. Exacerbation of the financial difficulties of the UWI and other TLIs
        3.3.2. Dependence on loans and bank overdrafts for operational cash flow
        3.3.3. Dependence on loan and overdrafts led to increased cost of operations
        3.3.4. The UWI centre was starved of resources as the limited amounts remained with the campus administration
        3.3.5. It led to an intensification of the salary parity dispute
        3.3.6. It caused further threat to the quality of the medical programmes
        3.3.7. It exacerbated the infrastructural neglect of the institutions

4. Cost Sharing
    4.1. Changes in Financing Features
        4.1.1. Financing HE was a shared responsibility between the state, the corporate sector, students and educational institutions.
        4.1.2. The state, as the major agent was to provide a significant portion of the funds and was responsible for creating the policies to facilitate the participation of the other partners.
        4.1.3. The state was responsible for the efficient use and equitable allocation of resources to HEIs.

4.1.4. Enhanced students loan programme to assist needy students with paying tuition

4.1.5. Provision of grants for the most needy students to assist with non-tuition expenses

4.2. Changes in the RAM

4.2.1. The RAM became a three step process, namely:

- Determining the total resource requirements
- Deciding on the portion to be provided by government
- Determining the students' portion

4.2.2. There were difference in the sequences of the processes depending on whether the HEI was national or regional

4.2.3. National institution

4.2.3.1. Submitted their annual submissions to the MOEC which reviewed and recommend to the MOF

4.2.3.2. The students' fees were expected to cover the other operational cost and salaries for staff not recognised by the MOEC

4.2.3.3. Deciding on the students' contribution was the final sequence

4.2.4. Regional institution

4.2.4.1. Planning the resource requirements for the centre and the individual campuses was done separately, however the institution's strategic plan provided the direction.

4.2.4.2. UGC resumed authority for determining the resource requirements of the entire university. CGC had to report to the UGC

4.2.4.3. Deciding on government's contribution was the final sequence.

4.2.4.4. Depreciation expenses were included for the first time in the calculation of the PCC

4.3. Consequence

4.3.1. Improvement in the financial performance of HEIs

4.3.2. Better management of receivables

4.3.3. Government assumed a diminished role in the salary negations for HE staff

4.3.4. New dimension to the salary parity dispute as UTech s staff seek parity with UWI staff

4.3.5. Lack of uniformity in the allocation of the resources to the HEIs leading to claim of inequity

4.3.6. Lack of a common methodology of calculating PCC

4.3.7. Lack of focus on the funding for research

4.3.8. Highest rate of access to HE in Jamaica.

Chapter 5 will analyse the findings of this chapter, the frameworks developed in chapter 2 will be used as the tools for the analyses. The features of the financing policies and RAM as well as their consequences as identified, resulted from several stages of data coding analyses and interpretation. These were then subjected to another process of coding, analysis and interpretation and resulted in the discussions in chapter 5.

CHAPTER 5
ASSESSING THE JAMAICAN MODEL

The central research question is "What are the consequences of the different models adopted by Jamaica to the funding of HE?" The answers to this question led to a review of the various models since 1962 and the intended and unintended consequences as described in chapter 4. Since the first approach in 1962 the government has made three changes: the free education policy in 1973, the cess in 1986 and cost sharing in 1993. The consequences outlined in chapter 4 revealed that there are still problems with the current cost-sharing model. This chapter will further analyse the various models adopted and seek to explain the reasons why it was considered necessary to change them at the various points.

The analysis of the financing options will be done using the Conditions Precedent Framework (Table 2.3) and its related Decision Tree (Figure 2.1) and the RAM will be analysed using the Resource Allocation Debate Pendulum (Figure 2.5) and the Operations Matrix (Table 2.10). The intention of the analysis of the financing decisions will be to answer the following questions:

Why was it considered necessary to adopt the free education policy?

Why was it considered necessary to change the free education policy?

Why was it considered necessary to change the policy of the cess?

What are the current concerns with the cost sharing policy?

The questions to be answered in the analysis of the RAM are:

What is the classification of the Jamaican RAM?

What are the intended objectives of the RAM?

Is the current model the most appropriate for the context of the Jamaican HE environment?

ASSESSING MODELS USED FOR FINANCING HE

The data do not reveal any significant problems with the financing policy of fee payment which existed up to 1973. Both the HEI and the then technical education institution CAST were at liberty to set their own fees based on their budgets. However, there were no increases in fees between 1962 and 1973. The data also did not reveal any expressions of dissatisfaction or difficulty with the fees charged by the institutions. Alexander et al (1967) speculated that the possibility of elimination of fees might lead to increased access and the reduction of the unit cost. However, it was the egalitarian notion articulated by the then Prime Minister Michael Manley that led to the change. It was thought that fee payment was elitist and would lead to the exclusion of the poor and a more egalitarian approach would have been better. On May 31, 1973, the Prime Minister in response to the question of why the policy was not to allow those who could pay to do so, said "the fundamental, philosophical and firm answer is that the government cannot accept a school system based on discrimination against children who are expected to sit side by side with visible advantages or disadvantages of one family against another" (Daily Gleaner June 1, 1973). The then leader of the opposition, Hon. Hugh Shearer had rejected the egalitarian notion in favour of a more targeted approach. He felt that the government should have channelled the subsidy to the SLB and to target the needy students. According to Mr. Hugh Shearer, "the real benefit under the proposal would be mainly to relieve some parents who have been paying fees, of the fees they were now paying whether they had any difficulty in doing so or not" (Daily Gleaner May 18, 1973). Chapter 4 pointed out that the empirical work of Mingat et al 1(985) and Gradstien (2003) proved that the egalitarian view such as that of the 1973 Michael Manley Government did not result in equity of access to HE by the poor but was of more benefit to the better off in the society.

Increased access was the main reason for the change from fee paying to free education. Table 4.3 showed that the enrolment growth rate for Jamaican in HE up to 1974 was 21% relative to 1964. No figures were available for 1970-73 hence it was not possible to calculate the rate during the entire period of fee payment before free education was introduced. During free education the average growth rate relative to 1964 was 19%, Table 4.4. Table 4.13 showed that during the period of the cess the enrolment growth rate of Jamaicans in HE was 20% and Table 4.21 showed that with increased capacity enrolment growth rate increased phenomenally to 43%. This would therefore suggest that the free education policy did not achieve its objective of increased access.

It could also be suggested that the free education policy had taken the HEIs in the opposite direction in relation to its main problem at the time. The withholding of funds from the university as a result of the Rodney Riots and the words of caution by the then Chancellor, Princess Alice, would suggest that a finance model leading to less dependence on the state was more appropriate. Free education had eliminated a source of funding that was independent of political control and hence had made the HEI more susceptible to state control.

Total State Financing 1973-86

The egalitarian philosophy and the belief that it would lead to increased access resulted in the following consequences:

1. Financial difficulties of the educational institution brought on by inadequate funding and late remittances
2. Economic difficulties of the country as a result of expensive social programmes, of which education was the main contributor
3. Limitation of the infrastructure of the HEI to cope with the demand hence a reduced rate of access

Chapter 2 argued that the conditions precedent for total state funding of HE are similar to the conditions of a totalitarian state. This is because of the central controls that are necessary to deal with the equity problem and resource constants. Table 5.1 compares the conditions necessary against those existing in Jamaica during that period. The table reveals that Jamaica did not fulfil any of the preconditions and hence propagated the consequences that ensued.

Table 5:1: Assessment of the Jamaican conditions during Free Education with the Conditions Precedent for Total State Financing of HE

Conditions Precedent	Existing Conditions
▪ **Total state control of educational planning and the education productive processes** o Detailed planning done only by the state o HEI operates as agent of the state o Enrolment controlled by the state (matriculation requirements and quantity) o HE staff are employees of the state o State dictates staffing needs of HEI	▪ **State supervised system of HE** o The University was expected to interpret the national needs and implement programmes consistent with such interpretation o The university was established under independent charter o Enrolment was in the total control of the HEI o HEI had total control over its staff o HEI had total control of staffing needs and state influence was to the level of funding
▪ **No market competition** o State organised staffing on rational bases to ensure no advantage over particular institutions o Salaries and wages determined by the state o Uniform wage rates regardless of job function in the HEI o Employers not allowed to compete for graduates o Graduates are not paid higher salaries than non-graduates o No distinction among the HEI on the basis of quality	▪ **Monopolistic Market Competition** o The limitation of HE to only one provider eliminated the need to compete for staff o State control salaries through control of the bargaining mechanism o Non- uniform wage rates o Employers compete for graduates o Graduates are paid higher wages o Not applicable as there was only one HE service provider
▪ **No resource constraints**	▪ **Significant resource constraints**

State control of the HE system is intended to ensure that in the absence of market mechanism to regulate demand for, and supply of, HE service the state does the balancing. State control therefore means state planning and management of the HEI. During the free education policy era there was no evidence of detailed state planning of the HE system. In fact, all decisions about matriculation and the offering of programmes, their development, and implementation were done by the HEI without any direct link to manpower planning and projections. The concept of academic freedom also dictated that the staff of the HEI could not be relegated to being mere agents of the state. Functioning in the aftermath of the Rodney Revolts of 1969 also resulted in a high level of sensitivity which prevented the government from moving in the direction of state control of the HE system. Enrolment was subjected only to capacity and matriculation requirements of the university and not to state dictates. Employees of the university could not be employees of the state because of the ownership structure (several governments) and the fact that it was a body corporate by

law. Staffing needs were determined only by university administration. The data showed that the lack of state control of the HE productive and planning system resulted in incoherence, hence, the inability of the infrastructure to keep pace with the demand and also for the resource to be redirected from the primary and secondary sectors to the HE (Sherlock 1986).

In order to prevent the use of public funding for HE from causing reverse redistribution the state would have had to manage the entire process. Since the total cost was being borne by the public then total benefits should likewise accrue only to the society as a whole and hence conditions to prevent any private benefits from accruing. The data showed that instead of preventing private benefits from accruing to individuals the opposite happened in the Jamaican system under the free education policy. The university had to compete for staff on the international market and had to pay accordingly. In addition to basic salary, it offered advantageous accommodation to entice expatriates to reside in the territory. Graduates were also paid much higher salaries. The only attempt at eliminating competition in HE was with the government's continued support of a single HE provider.

The existence of market conditions under the policy of free education automatically restricted resources for HE because it relieved those who could afford to pay and shifted the responsibility to those who could not. Instead of targeting assistance to the needy, it depended on the taxation system. Williams (1986) reported that the taxation system in Jamaica up to 1986 was based on the income tax law of 1919, and since 1948 the main source of income for the Jamaican government was income tax, which in 1982-83 raised 47% of the national income with 28% being derived from consumption duty and 9% from custom duties. Jamaica also has an inefficient tax collection system which makes it difficult to collect from self-employed and wealthy entrepreneurs.

Resource adequacy was also necessary to enable the state to pay for the social services. In the Jamaican situation the process for determining the resource requirements for the HEI was based on a flawed notion that the presence of the Ministers of Finance for the countries of the region on the UGC automatically guaranteed the adequacy of the resources. Resource adequacy, however, depended on national productivity which had to be decided within the context of the overall country's needs, yet the UGC made the decision in isolation and only focused on the work of the university. The strategy of

reviewing the university's resources in isolation was more applicable to a situation where the government was only one of the many sources of income. In such a case, the institution could turn to other sources when the government could not respond. As it stood, there was but one provider of the resources and when the country could not satisfy the needs the HEI had no other avenue, hence its financial difficulties. If there was total state control then limits could be placed on the functions and restriction of activities within the resource capabilities of the supporting countries. The flawed system of resource allocation therefore resulted in the financial difficulties of the HEI, the quality threats to the programmes and the economic difficulties of the country. The government then adopted the policy of the cess in order to provide funds to address the HEI needs. The prolonged period of civil unrest that followed the announcement in 1986 showed that the public did not grasp the plight of the country and had believed that free education was the ideal for upward mobility for the poor.

Cess: The reason it was changed

Chapter 4 revealed that during the period of the cess the financial difficulties of the HEI heightened; the infrastructural neglect increased and for two consecutive years enrolment declined due to capacity constraints. There were also increased threats to the quality of the HE programmes and the institutions were forced into dependence on loans to address its cash flow deficiency. The dependence on loan increased the operational cost and led to reduced efficiency.

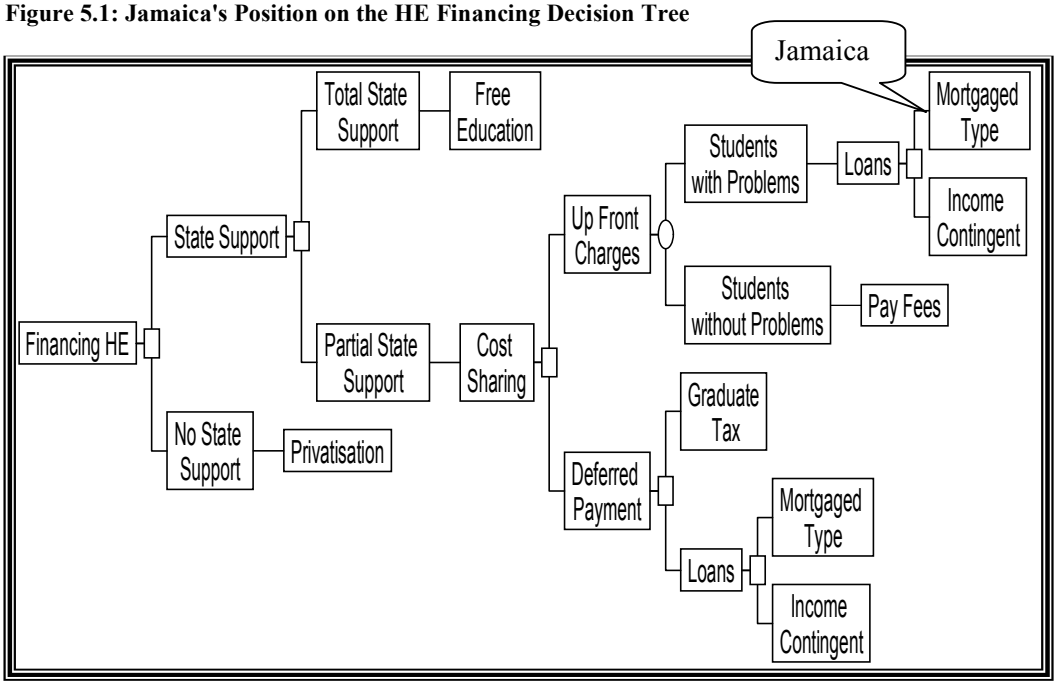
The previous section argued that the consequences suffered by the HEI during the period of free education were as a result of the failure of the country to satisfy the conditions precedent. That would have meant that to address the problems the country should have either returned to a fee paying policy or implement the conditions precedent. The conditions precedent would have meant a policy of state control of the HE system, removal of all market conditions from HE and the provisions of adequate resources consistent with the demand made on the system. The country instead implemented a new tax collection measure (the cess) which was aimed only at addressing the resource deficiency problems at the systems level. The analysis of the financial records revealed that prior to this there was an exacerbation of the problems, hence the conclusion that the lone taxation measure was inadequate. For this reason in 1993 the government decided to abandon the free education

policy and return to fee paying. The prolonged protest at the time revealed that the policy decision to move to the cess rather than follow the path dictated by the decision tree was a political one because free education was popularly regarded as an upward mobility channel for the poor. As a result the consequences that were foreseen were ignored.

Assessing the Jamaican HE Cost Sharing Policy

The cost sharing policy as articulated by the Hon. Burchel Whiteman, Minister of Education to the World Bank in 1996 has three component: the sharing of cost between the government and the beneficiaries, the provision of a loan to needy students to cover tuition fee, and a grant to the very needy to cover other educational costs. According to the HE Financing Decision Tree (Figure 5.1) Jamaica is at the position of "up-front charges with mortgaged typed loans for students with inability to pay.

Figure 5.1: Jamaica's Position on the HE Financing Decision Tree



General Conditions

Jamaica's position against the conditions precedent for cost sharing is summarised in Table 5.2 and explained below.

Table 5.2: Assessment of Jamaica's Conditions during Cost Sharing against the General Conditions Precedent

General Conditions Precedent to Cost Sharing	Existing Conditions
Disequilibria between social and private rates of returns on educational offerings	Education, Town Planning, Public administration, Nursing and Social work are in low demand. These are programmes with high social and low private rate of return
Market-based accountability mechanisms	Politically accountability – The upward accountability sub-category
Students are allowed free choice of institutions	Students are free to chose which institution to attend
Staff are employees of the institutions and conditions of service are decided on by institution and staff	Staff are employees of the institution and state involvement in the negotiation is able to exert undue control
Institutions determine their own fees	Institutions determine their own fees but state use monopsonistic control over the level of fees to be charged
Government determine its own level of support independent of institutions' fees	Government support and fees are linked

Social subsidy is necessary in an education market where there are disequilibria between private and social rate of returns. This is because in such markets programmes with high social and low private rates of returns will be neglected in favour of those with high private returns. The state involvement is therefore necessary to protect the socially beneficial programmes. In reviewing the applications for admission to the two publicly subsidised universities in Jamaica it was revealed that there was low demand for programmes in teacher training, health and applied science, social work and the arts subjects such as languages and history. On the other hand there were high demand for programmes in business administration, engineering, medicine and law. Graduates of these programmes are deemed to command higher salaries.

The market-based accountability model views the citizen as consumer and the public sector institutions in this context would be judged by the quality of their services rather than by detailed monitoring on how they are using the resources. In a HE system where students are required to pay fees they usually do not apply to institutions giving poor service. The decision by government to maintain authority to approve fees has resulted in the politically-based accountability model as the authorities seek explanations for the level of fees to be charged.

In a market situation consumer choice is necessary to force quality and efficiency. Students should be able to freely choose the institution they prefer subject to capacity and matriculation requirements. This condition is satisfied in the Jamaican education market.

In the centrally-planned economy the state manages costs; however, under competitive market conditions cost results from the interaction between demand and supply (Lipsey and Chrystal 2004). For this reason the condition is for staff to be employees of the institution. This would also allow for the interplay of suppliers of (staff) and the demand for labour (institutions). In Jamaica, staff of the HEIs are employees of the institutions but the state maintain a role in salary negotiations in order to control the level of salaries being paid. The state is on the negotiating team with the UWI staff and heads the negotiating team with the UTech's staff. As the leaders in the CGC and the UGC the government uses its position to control the cost of the UWI. In the case of UTech it attempts to do so by reviewing the budget and threatening the institution to acquiesce to its demands for reduction. The consequence of the state's position is the exertion of undue influence and hence, a distortion of the labour market.

The precondition for the HEI to determine its own fees is because there should not be price control in an HE market. Price control is one of the mechanisms used in monopolistic competition to prevent abuse of power of the single supplier. As industries move towards free market competition price control becomes less necessary and inefficient. Within the HE environment the absence of price control should lead to variable fees and the encouragement of competition. Barr (2004) opined that the absence of price control in the HE market will lead to open-ended funding for the HEI and improvements in efficiencies through competition in the HE market. It is for this reason that this study proffers institutional control in the determination of fees to be charged to its students. It is currently the Jamaican government's policy to set tuition fees and this means price control. In the discussion below the effects of price control are outlined. Fees in the Jamaican HE situation are, however, variable and result from negotiations. This, however, raises the issue of the rational basis for determining the level of fees for any institution.

The precondition for the government to determine its level of subsidy, independent of fees is also made against the background of the resource constraints of the country. The linking of the subsidy and fees is another method of price control. In the case of the UWI the state

pays the difference between the per unit costs and the amount charged to students. This policy perpetuates central control since government is committed to the difference. In the case of UTech the commitment of the state is to cover staff costs. James and Williams (2004) observed "much of the psychology of willingness to pay tuition in the public tertiary institutions is based on the 20% of economic costs charged and the assumption that government must price education to ensure social goals are met". They also proffered that as the state's resources are reduced the de-linking would allow fees to be based on the supply cost and the consumers' willingness to pay thereby enabling the institutions to apply managerial creativity to ensure sustainability.

Issues from the General Pre-Conditions

The issue of government's role in a HE market arises because of government control of both price and cost of HE. The aim for this type of control is to ensure affordability for the poor. However, the strategy of minimising both price and cost is responsible for the inefficiencies in the HE market. This is demonstrated by using break even analysis (Douglas 1992), where revenue (R) is equal to Price (P) multiplied by quantity (Q). In order to break even total revenue is the average variable cost (AVC) multiplied by quantity plus the total fixed cost (TFC). The equation is therefore

$$\mathbf{P\ (Q) = AVC\ (Q) + TFC}$$

By way of substitution

$$\mathbf{P\ (Q) - AVC\ (Q) = TFC}$$

Therefore

$$\mathbf{Q\ (P - AVC) = TFC}$$

$$\mathbf{Q = TFC/\ (P - AVC)} \qquad \mathbf{(5.1)}$$

To demonstrate Table 5.3 was constructed.

Table 5.3: Illustration of the Effects of Cost Control

	Original Assumptions	Fixed Cost Reduced	Average Variable Cost Reduced	Both Elements of Cost Reduced
P	$100,000	$100,000	$100,000	$100,000
Q	3,000	2,750	2,400	2,200
AVC	$60,000	$60,000	$50,000	50,000
TFC	$120,000,000	$110,000,000	$120,000,000	$110,000,000

With the original assumptions about P, AVC and TFC (column 1), 3,000 students could be educated. If TFC is reduced by 10% with AVC and P being constant then only 2,750 students could be educated. A reduction of AVC by 10% with P and TFC being constant would reduce the student number to 2,400. When both elements of cost are reduced with P being constant then there is the worst effect on enrolment to 2,200 students.

The equation, therefore, supports the view that a reduction in both cost and price of HE will result in a reduction in quantity, that is restricting access. The data showed that in Jamaica in the 1970s access was restricted because of capacity constraints to absorb those who were qualified for matriculation to HE. The data also revealed that the rate of access that was achieved was at the expense of the deficits on the institution's balance sheet. Access would have been more affected if deficits were not created to maintain the levels of outputs. The data analysis showed that since 1973 when the government took control of the financing of HE and continued to make access its priority in order to maintain growth, it allowed the university to build up deficits. The deficits were expressed in the negative net worth of the accumulated fund of the institution, the high liabilities provided by bank loans and the high receivables due to the governments' inability to live up to its commitments. A third problem, that of a threat to quality also occurred as a result of the strategy of direct price control. The equation also shows that in order to maintain the levels of output while attempting to minimise or eliminate the deficit, an institution will be forced to reduce quality. In Jamaica the threats to quality were exemplified in the inadequate equipment, overcrowded classrooms, inadequate library resources and poor study environment.

The cess was not designed to change the strategy as its purpose was only to provide a new source of income to enable the government to maintain its position of control. In adopting cost sharing the government continued its monopsonistic approach by maintaining control over of the two elements in the cost-revenue equation. This is implicit in its policy to approve fees and its role in the salary negotiations as well as its grip over the budgets of the HEIs. By so doing it has continued a policy to do one of, or a combination of, the following:

a. Restricted access
b. Contributed to the poor financial performance of HEIs or
c. Placed the quality of the programmes at risk.

The effect of price control on the equity problem is another issue to be addressed. The purpose for maintaining the responsibility to approve fees was also to protect the poor from being denied access to HE. There are three problems with the strategy, however. First, because the purpose is to protect the poor, fees have to be set at levels perceived to be affordable by the poor. Table 5.4 reveals that the majority of the people in the 17-24 years age cohort who are qualified for HE are from the richest quintile of the Jamaican society: 72.2%, 25.9% was from quintile 4 and 46.3% from quintile 5 while only 16.5% are from the poorest quintile, 5.8% from quintile 1 and 10.7% from quintile 2. This supports the view that an across the board strategy was more beneficial to those needing less protection.

Table 5.4: School Enrolment by Age Group and Consumption Quintile

Quintile	5-11 Year Old Attending Primary or Higher			12-19 Year Old Attending Secondary or Higher (excl Tertiary)			17-24 Year Old in University			17-24 Year in Other Tertiary		
	1992	1998	2002	1992	1998	2002	1992	1998	2002	1992	1998	2002
Poorest	93.4	97.2	98.8	49.2	47.6	49.0	0.0	0.3	0.3	0.8	0.9	1.0
2	96.0	99.1	99.1	50.5	60.0	58.0	0.0	0.2	0.2	0.8	2.7	1.8
3	98.0	98.9	99.3	59.9	63.6	64.3	0.4	0.2	0.1	1.6	2.6	2.3
4	96.9	99.0	99.8	62.5	68.9	66.4	0.9	1.0	1.0	3.0	4.6	5.5
5	99.0	99.2	99.3	69.4	76.0	70.1	1.3	5.1	8.1	5.2	10.7	9.9
Jamaica	**96.3**	**98.7**	**99.2**	**57.5**	**63.3**	**61.6**	**0.5**	**1.5**	**2.1**	**2.2**	**4.7**	**4.3**

Source: James and Williams 2004

The second problem is that since the government is committed to bridging the gap between total cost and students' fees (the case of the UWI), and because resources are limited, then the country would again be faced with the three fold problem of limitation to access, deficit financing of HEIs and poor quality institution. The third problem has to do with the practice of ex post pricing and its link to cost control. In the Jamaican system, price is equal to cost and hence when cost is reduced, price is reduced. When cost is reduced then access is affected as was demonstrated by table 5.3.

The purpose of price control in any market should be to protect the consumers as a whole from the unfair practices of the entrepreneurs. Price control is not a suitable strategy for protecting a section of the consumption market because it is likely to end up subsidising that aspect that does not need the subsidy. A better way of supporting the poor would be to allow the institutions to decide on their own fees and the government being free to channel

its resources to assist those students who cannot afford to pay. This would also allow for targeting assistance to those programmes with high social and low private returns. It is in this context that the recommendation to de-link subsidy and fees is made.

Another aspect of the equity problem is that of equal treatment for the HE consumers. It should be pointed out that the difference in treatment has been a consequence of the evolutionary nature of the development of HE in Jamaica. The Jamaican system has compartmentalised the HE service providers and so different processes have evolved for dealing with the regional institution as against the national ones. Chapter 4 revealed that the difference in the processes and treatment of deciding on fees has led to students of one HEI absorbing a higher percentage of the economic cost than the other. With the UWI the government first decides on the percentage of the economic costs to be absorbed by the students and in the case of UTech, the students' fees are determined after the subsidy is set. In the case of the former the philosophical underpinning is on affordability of the poorest quintile in the population. This led to a small percentage for the students and a large percentage for the government. The result is a deficit for the institution when the government cannot fill the gap. In 2003 and 2004 the rise in the receivables for the UWI was attributed to this factor.

The philosophical underpinning in the latter case is on resource constraints by the government and the students are left to pick up the balance. As a result of limited resources and conflicting priorities small amounts are determined for the government's portion and the students therefore end up paying a higher percentage of the economic cost. The different result is dependent on whether a student is attending the regional as against the national institution and is market distortion. All consumers in a market should be given equal treatment and the state's role should be to correct inefficiencies and support equity not to be the cause of the opposite. The inequity in treatment of the HE consumers therefore is a consequence of an unchanged financing model for a system that has shifted from a single provider to diverse providers.

Sub-Routes to Cost Sharing

The general preconditions, discussed above, were designed to provide market efficiency and to protect the social programmes that would suffer under imperfect market conditions.

They do not, however, address all the issues relating to equity of access. The literature suggests one or a combination of the options in Table 5.5 to address further the equity problems. It was argued in Chapter 2 that the choice of the options (sub-routes) was also dependent on a country's ability to satisfy certain conditions precedent. The extent to which Jamaica has satisfied the conditions precedent is summarised in Table 5.5 and explained below.

Table 5.5 Assessment of Jamaica's conditions for the sub-routes of cost sharing against the conditions precedent

Conditions Precedent for the Sub-Routes	Existing Conditions
Up-Front Charges ▪ Severe Budgetary constraints	▪ Severe Budgetary Constraints
Mortgaged Type Loan Programme ▪ Institution specialising in lending for human capital development ▪ Large enough capital fund for the loan programme ▪ Labour market certainties in the absence of specialised lending institutions	▪ The Students Loan Bureau was established to specialise in loans for HE studies ▪ Loan pool enhanced in 1995 by World Bank programme but still considered insufficient ▪ Relatively high labour market uncertainty hence dependence of specialised lending institutions
Income Contingent Loan Programme ▪ National budget can manage up-front cost of university operations ▪ Taxation system is able to track all citizens throughout their lifetime ▪ Information to encourage participation from low-risk high return graduate ▪ Opting out provision for early repayment ▪ Provision for society to absorb risk for non-payment	▪ National budget cannot manage up-front cost of universities operations ▪ Taxation system is unable to successfully track citizens' income ▪ National information technology system is at its infancy stages ▪ Not applicable in the absence of a programme ▪ Not applicable in the absence of a programme
Graduate Taxes ▪ Mandatory participation ▪ Efficient income tax collection system	▪ Not applicable in the absence of a programme ▪ Income tax collections system is inefficient

It was also argued in Chapter 4 that deferred payments schemes were more equitable for access because they provided free education at the point of delivery and enabled the beneficiaries to repay when they are most able to do so. Mortgaged type loans were deemed to be costly because of the high risk of non-repayment and the underdeveloped market for loans for human capital development. A Graduate Tax (GT) system was deemed to be most efficient and egalitarian (Gracía-Peñalosa and Wälde 2000) but psychologically discouraging because repayment was indefinite. There would also have to be mandatory participation to achieve lowest risk and highest returns. Income contingent loan (ICL) with an opting out clause for early repayment was considered the best option to avoid the problems of moral hazard and adverse selection (Jacobs 2002). The primary preconditions for ICL therefore are up-front support for HEIs and efficient taxation and

information systems. The secondary preconditions are the early opting out provision and the ability of the society to absorb the risk for the graduates with difficulties. Jamaica has a very inefficient tax administration system (Final Report of the Tax Policy Review Committee to the Government of Jamaica 2004) and hence is not in a position to undertake a deferred payment scheme.

It was already pointed out that Jamaica had significant resource constraints which have prevented it from financing HE. For this reason a scheme based on up-front charges was the most practicable option. The 1996 Jamaica Student Loan Project with the World Bank enhanced the pool of funds of the SLB and further enabled it to provide loans for HE. Nonetheless, the pool was still not large enough resulting in a restriction to only provide loans for tuition fees.

The labour market uncertainty is demonstrated in the country's high unemployment rate, which in 2003 was 12.8%, moving from the 2002 level of 14.8% (http://www.statinja.com). The 2003 rate is very high compared to the world average of 6% (http://laborsta.ilo.org). Labour market uncertainty is the reason for the reluctance of the banking sector to engage in lending for human capital development.

Issues from the Sub-Routes of Cost Sharing

The analysis shows that equity of treatment for HE consumers is an issue. The political rather than the systems approach in deciding on students' fees leads to inequity of the treatment of the students of the regional institution as against those of the national ones. The political approach caused the government to deal directly with the individual institutions rather than collectively.

Equity of access is the second issue because the strategy employed is giving unintended results. The stated priority of the government of Jamaica is to increase access in HE. However, the data showed that the opposite was achieved. As suggested by the literature a mortgage type loan scheme is not the best option to redress the equity imbalance in access to HE. This is because of the inability of the poor to provide collateral, the high risk to the lending institutions and the high costs to the borrowers. Tables 5.6 to 5.9 show that the current cost sharing policy is not adequately addressing the issue of equity of access to HE.

Table 5.6 shows that the richest quintile in the Jamaican population benefits most from tertiary education. In 2001 the ratio of the richest to the poorest was 11.5:1. This, however, was an improvement over the ratio of 14.5:1 in 1992 before the cost sharing policy.

Table 5.6: Mean Annual Per Capita Consumption of Education of Tertiary Households by Consumption Quintile, 1992-2002

Year	Quintile (J$)					Ratio of Q5 to Poorest
	Poorest	2	3	4	5	
1992	75	166	246	398	1085	14.5
2001	1117	1569	2507	4689	12849	11.5

Source: James and Williams 2004- Jamaica Survey of Living Conditions

Table 5.7 shows that the loan solution was also most beneficial to the richest sector of the Jamaican society. Only a very small percentage of those who seek and receive assistance from the SLB are from the poorest quintile; 4.8% and 2.4% respectively. The highest percentage of those seeking and receiving assistance are from the richest quintile; 65.7% and 69.1%.

Table 5.7: Source of Applications to SLB and Distribution of Benefits by Quintile, 2002

Quintile	Loan/Grant Applications	Benefits Received
Poorest	4.8	2.4
2	6.0	6.8
3	7.3	4.5
4	16.1	17.2
5	65.7	69.1
Jamaica	**100.0**	**100.0**

Source: James and Williams 2004 - SLC 2002

Table 5.8 shows that most people (72.2%) of the poorest quintile who had matriculated to the tertiary level were not attending that level institution. This was in contrast to the richest quintile where only 54.6% of that sector who had matriculated were not attending. This shows that more effort needs to be made to assist the poorest sector of the population to access further and higher education.

Table 5.8: Distribution of Matriculated Students (Age Group 17-24 yrs)

Quintile	Not Yet Attending Tertiary	Attending or Completed Tertiary	Total Matriculated
Poorest	72.2	27.8	100.0
2	75.9	24.1	100.0
3	73.8	26.2	100.0
4	56.5	43.5	100.0
5	42.5	57.5	100.0
Jamaica	54.6	45.4	100.0
Source: James and William 2004 - SLC 2002			

James and Williams (2004) also use data from the Survey Living Conditions (SLC) to support the view that one of the solutions to the equity of access problem for Jamaica was to shift resources from the tertiary sector to support primary and secondary education. That, they thought, would enable more people from the poorest sector to matriculate to HE. Table 5.9 shows that of those out of school the majority belong to the poorest quintiles. This was applicable for all the age groups. The figure has declined since the cost sharing policy of 1993; however, the decline has been higher for the richest quintiles.

Table 5.9: Out of School Rate by Age Group and Consumption Quintile

Quintile	Age Group								
	5-11 Year Old			12-16 Year Old			17-24 Year Old		
	1992	1998	2002	1992	1998	2002	1992	1998	2002
Poorest	6.6	2.8	1.2	18.0	17.0	14.3	94.5	92.8	92.5
2	4.0	0.9	0.9	13.3	9.4	8.4	91.4	88.5	91.0
3	2.0	1.1	0.7	9.0	5.8	6.1	87.9	86.8	85.7
4	3.1	1.0	0.2	5.2	3.8	3.1	88.3	81.6	84.0
5	1.0	0.8	0.7	4.3	2.0	2.4	82.3	70.4	71.9
Jamaica	**3.7**	**1.3**	**0.8**	**10.5**	**7.5**	**6.8**	**89.0**	**81.5**	**84.5**

Source: James and Williams 2004 - SLC various years

Table 5.10 shows that the main problem of the poorest groups was that of not attaining the matriculation requirements for further and higher education. This supports the view for attention to be focused at the lower levels to enable the poorest to be in a position to enter HE.

Table 5.10 Highest Qualification of Persons out of School (Age Group 17-24 yrs) 2002

Quintile	Below Matriculation Requirements	Satisfy Tertiary Matriculation Requirements				Total
		Not Yet Attended Tertiary	Enrolled in Tertiary	Completed Tertiary	Total Matriculated	
Poorest	94.2	4.2	1.4	0.2	5.8	100.0
2	89.3	8.1	2.0	0.6	10.7	100.0
3	86.9	9.6	2.6	0.8	13.1	100.0
4	74.1	14.7	7.0	4.3	25.9	100.0
5	53.7	19.7	19.1	7.5	46.3	100.0
Jamaica	**78.6**	**11.7**	**6.9**	**2.9**	21.4	100.0

Source: James and Williams 2004 - SLC 2002

The sub-routes of cost sharing were designed to address further the equity of access issue. The analyses above have supported the view that up-front charges with mortgage type loan do not adequately address the issue. It is being argued, however, that given the country's inability to manage the other options that was the best option at the time. The assessment against the conditions precedent also supported the view. It is, therefore, suggested that deliberate actions be taken to enable the country to fulfil the conditions precedent for the better options.

The study will now address the manner in which the country has channelled the state's support to the HEIs.

ASSESSING THE JAMAICAN RAM

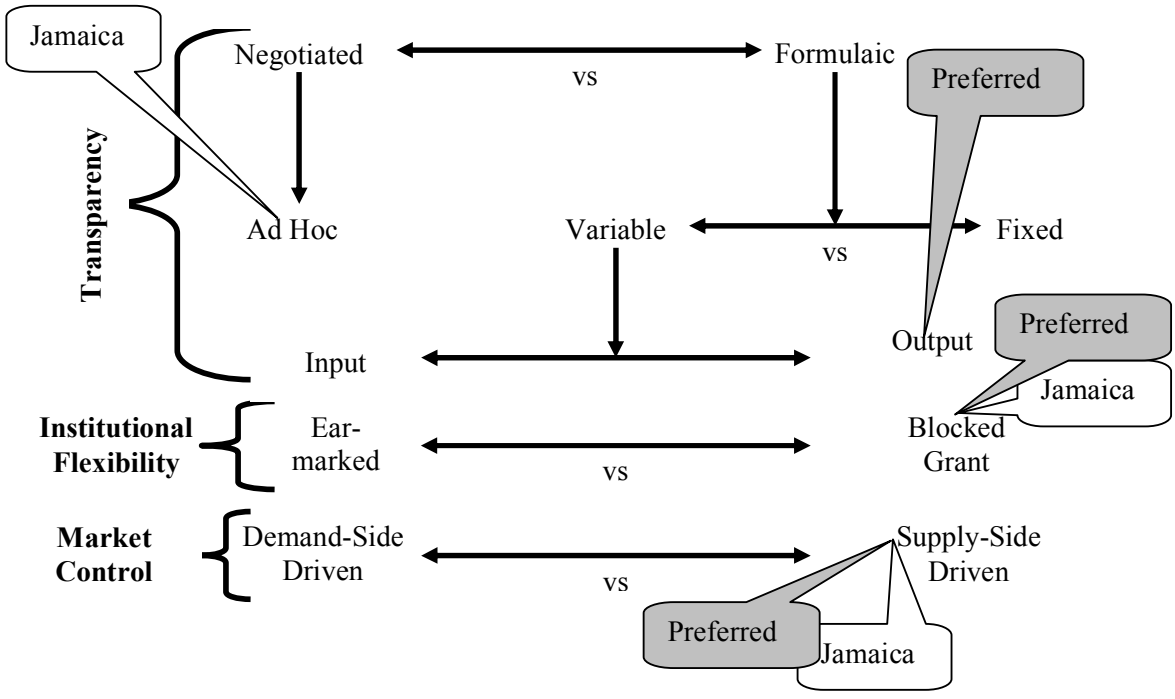
According to the RAM Debate Pendulums the Jamaican HE RAM is classified as an ad hoc-negotiated RAM which awards funds as block grants and is supply-side driven. There are several bases for the placement.

First, the allocations to the two government supported universities result from separate bilateral discussions. This was outlined in Chapter 4 where it was shown that in the case of the UWI the UGC is the forum for negotiations and for UTech the discussions are expected to take place with the MOE. Salary negotiations are also part of the system as the staff unions within each institution have to negotiate with the government and the institutions. This aspect is significant as salaries account for more that 60 % of HE expenditure. Here again there are differences as the staff of the UWI negotiate directly with the administration of that institution, with representatives from the MOF being on the team and the staff of UTech negotiate directly with the MOF with members of the university administration being on the team.

Second, the funding is activity-linked, input-based but not formula-driven. This means therefore that it is ad hoc. The UWI presents its expenditure proposals to the UGC which examines the line items and approves accordingly. UTech and the other national tertiary level institutions use programme budgeting but the expenditure is still determined by line items. Expenditure for staff salaries takes precedence over all the other expenditure. In agreeing to the limits the authorities do not take enrolment in consideration. Also, in the case of the UWI where funding is provided for research, this is done on the basis of the expenditure budgets for the research projects and not on the outcomes of the research. General research is funded as part of the teaching function of the UWI where staff are employed for both teaching and research and those activities are computed in the salaries.

Third, there is also no discernable mathematical basis for the resource allocation. The formulae that were presented in Chapter 4 were designed to compute and allocate cost to the supporting governments. They were not used to determine the operational budget/resource level which is completely needs-driven. It could be suggested that the

Figure5.2: Jamaica's Placement on the RAM Debate Pendulums



staff/student ratio is used to determine the funding for academic staff. There are talks about a 1:12.5 ratio for academic staffing, however the analysis showed that the ratio was not being used in the allocation process. There are also no established ratios for non-academic staff and no quantitative bases for allocating resources for the other activities such as maintenance and teaching materials. In 1997 as part of the exercise to grant university status to UTech a staff establishment was agreed on with the Ministry of Education. There was however no objective basis for the establishment nor mechanisms for review. In pursuit of its strategic objectives the institution has changed its structure several times since and the staff complement has also increased but there has been no increase in the funding to reflect the increased staff complement.

Fourth, neither institution is required to return unused funds to the government. Within the national budget the funds are granted under the category called Grants and Contribution and this furthers the point of block grant funding.

The fifth basis is the fact that it is not a voucher system and funds are awarded directly to the institution without reference to the students. Even if the "money follow" concept is used, the Jamaican system would still fall in the category of supply-side driven RAM as neither enrolment nor graduation numbers are used to determine the level of resources.

Locating the Jamaican RAM

The institutional flexibility discussion as guided by the "earmarked-block grant" debate in Chapter 2 revealed that blocked grant funding allowed the institution to retain savings from efficiency gains or the flexibility to vire funds to more needy areas as the course of operations dictate. The Jamaican RAM, in so far as its funds are "block grant" aids in institutional flexibility, however, further analysis is needed to ascertain whether other elements of the funding mechanism mitigate this intention.

The discussion in Chapter 2 also suggested that a strictly demand-side driven RAM would result in control being placed in the hands of the students to direct the public funds to their choice of HEI. The Chilean experiment was cited as giving no evidence that the voucher system resulted in improved quality. On the contrary, it led to inefficiencies and perpetuated reverse redistribution. The voucher system/demand-side driven RAM was

noted, however, to be the best example of how the state may participate in a HE free market. The real issue, however, is that given the externalities in HE the state would have to ensure that programmes with high social and low private returns are protected. It is for these reasons why the supply-side driven RAM is preferred to the demand-side RAM. The Jamaican RAM is clearly not a voucher system and given the preference for a Supply-Side system the analysis would have to focus on how the other features of the Jamaican RAM address the issues intended by a Demand-Side Driven RAM – efficiency, quality control, equity.

The comments so far cover the two latter parallel debates on the RAM Debate Pendulums (Figure 5.2). The discussion will now focus on the Transparency/Production aspect of the Debate. Chapter 2 establishes that a RAM should result from a transparent process, be consistent with the institution's governance and management practices, and encourage efficiency and quality. The assessment, therefore, will be guided by the following questions drawn from the operations management matrix and the RAM debates:

1. Is the process transparent?
2. Does the RAM result in accountability practices consistent with the Governance and management models?
3. Does the RAM have an in-built mechanism to encourage efficiency?
4. What is the relationship of the RAM to the matter of quality of the HE offerings?

Jamaican RAM and Transparency

Since 1962 the authorities have sought to provide transparency to the resource allocation process by requiring the HEIs to submit their needs for assessment and funding. Figures 4.1, 4.2, 4.3, 4.4, 4.6, 4.7 and 4.9 illustrate the processes. As articulated in the taskforce report on cost sharing for tertiary education it was envisaged that the strategic planning approach to budgeting would be the basis for transparency in the negotiations for funds as at 1993. The analysis, however, indicated that while the institutional plans did not prove problematic when there was only a single HE provider, it was not adequate to satisfy the transparency issue in the case of multiple providers. It is difficult to judge transparency when the two HEI strategic plans are submitted to two different bodies with no stated guidelines for basing judgement. In such circumstance, allocations are deemed arbitrary

and without basis. The state in this regard leaves itself vulnerable to the criticism of being biased when this may not be the case.

Also in 1962 the UGC was established as the intermediate body with specific terms of reference for channelling the resources. The intention was to avoid political interference and allow for independent assessment of the HEI's work. The structure and terms of reference were crafted to suit a single provider of HE for several countries. The nature of HE service delivery has changed significantly since 1962, yet the system was not changed to enable an intermediate body to assess and channel resources to several HE service providers. The lack of a review of the structure and nature of the intermediate body/bodies is also cause for concern about transparency and objectivity in the resource allocation for HE. England is cited as an example of a system that had separate intermediate bodies for channelling resources. The resources for the former polytechnics were channel through the Polytechnics and Colleges Funding Council (PCFC) and the universities were funded by the Universities Funding Council (UFC). When the polytechnics were granted university status they and the original universities were funded by a new funding council, the Higher Education Funding Council for England (HEFCE). The new body was expected to provide transparent and objective grounds for funding the older as well as the newer universities. As at September 2005 there will be another entrant in the HE arena in Jamaica when Mico Teachers' College becomes a university college. Other institutions will follow in the near future. Hence, the country needs to establish a structure to deal with the transparency issue of how the funds are channelled to multiple HE service providers.

The structure of the negotiating process is another point for discussion for the HE system in Jamaica. Historically because of its superior mission with teaching and research, the UWI administration was awarded higher level of resources than the national TLI. The chairman of the government negotiating team (The UGC) with which the regional institution deals is the Minister of Finance. The national institutions deal with the finance officers of the Ministry of Education. It is suggested that the national institutions are at a disadvantage because of the assumption that commitments made by the Minister of Finance would take precedence over the commitments of junior officers of another ministry. It could also be argued that the difference in the process was as a result of the specific mission of the single provider, but when diversification occurred in the HE service there should have been changes in the process to enable equal treatment to all the

providers. The difference in treatment, therefore, raises the issue of inequity and, hence, inbuilt inefficiency in the HE market.

The continued use of the hierarchical structure to compensate staff of the different HEI has also made it difficult to benchmark operational efficiency in the Jamaican HE market. The largest component of HEI cost is salary and if such is artificially determined then there can be no meaningful comparison. It can be claimed that low cost did not result from managerial action, but was imposed by the RAM.

Jamaican RAM and HE Market Issues

The observation is made about the peculiar practice in the HE RAM of ex post pricing, that is, price charged being equal to actual cost. The normal practice is for ex ante pricing where businesses make the best estimate of costs and add a margin or mark-up. In the case of "For Profit" organisation, the margin is intended for shareholders' return and future business expansion. With the "Not for Profit" organisation, the surplus is intended for future business development. The allocation and costing equations in Chapter 4 are mathematical interpretations of the ex post pricing practice of the Jamaica HE system. Regardless of the period since 1962 the process has been two-fold as follows

1. Budget was used as indicative cost and price to the participating governments and remittances were regarded as prepayments.
2. Billing was based on actual cost and adjustments were made against the prepayments.

Equations 4.1 to 4.3 depicted the pricing structure under the levy system where cost was distributed according to predetermined ratios. Equations 4.4 to 4.8 showed the change to per unit pricing per faculty across the campuses. The intention of the change was for price to be charged to the parent governments in proportion to student numbers. The structure, however, had an inbuilt cross-country subsidy. The third change was depicted in equations 4.9 to 4.10 where there was an attempt to eliminate the cross-country subsidy and prices were specific to the cost per country. The last change was with the components of expense data when depreciation for capital upgrade was included.

At each stage there have been issues raised with the ex post pricing practice. With the levy system the concern was with measurement of benefits. Participating governments wanted

to link their payments directly to the benefits in relation to the number of their students being educated at the university. The change to per capita costing dealt with that concern to an extent, and then the issue of cross-country subsidisation was raised. This was implicit in the billing disputes between the Jamaican government and the university's administration. The country specific calculation, as depicted in the third change, addressed this concern but the billing process and the components of the expense data became the next focus. The billing process required the governments of the campus countries to advance the payments to the university and recoup from the beneficiary countries. This caused delays and exacerbated the receivables management problems of the university. It was realised that since the campus country was responsible for capital development it was not being recompensed by the beneficiaries of the non-campus countries since that was not included in the billing.

It is suggested that the practice of ex post pricing in HE in Jamaica has minimised the responsibility of the management of the university for its future development. Since pricing is equal to cost then there has been little or no room for the administrators of the university to initiate expansion and development. Such would have to be from additional grants, consultancies and other third party funding. The records revealed, however, that the opportunities for these were limited. A change in the pricing practice could, therefore, open another avenue for real entrepreneurialism in the management practice of HE because it could open the avenue of loan funding for capital development.

A second suggestion is that the ex post pricing practice does not encourage internal efficiency. In making this point a comparison is being made with the English practice of ex ante pricing. HEFCE predetermines prices per subject clusters. Institutions are paid accordingly, and the practice of block grants enables them to gain or lose according to their operational cost. They are therefore encouraged to operate within or below price in order to achieve savings. Jamaica practices blocked grant funding but the intention of efficiency gain is mitigated by the practice of ex post pricing. There is little to be gained from operating below price since price is equal to cost.

A third suggestion about the ex post pricing practice is that it resulted in state-controlled governance and hence a contradiction of the state supervisory intention of the governing instruments. This argument is based on the idea that since there is little incentive for

efficiency, the state finds it necessary to track and monitor cost. For this reason the state's involvement is very crucial to the internal budgeting and salary negotiations processes of the universities. As a result, the universities are subjected to the procurement processes of the state where expenditure over certain amounts must be approved by the MOE and the Cabinet.

The second issue about the relationship between the Jamaican RAM and the HE market is with the input bases for the negotiations for funding. Funding the institutions on the input method and particularly human resource inputs is the main reason for the continuation of the salary parity dispute. The academic staff union of UTech is currently requiring the government to explain why the staff of one institution with the same mission and mandate as the other is compensated at a lower level. The explanation given by the Ministers of Finance and Education of qualification, functional and institutional position differences (see Chapter 4) have not been accepted by the staff. The Minister of Education attributed the difference to higher qualification levels, but this was refuted by the past and current presidents of UTech. The Minister of Finance opined that the difference was due to a difference in the skills of the negotiating teams which raises the issues of objectivity and transparency of the process. The Bursar of the Mona Campus of the UWI suggested that there was a difference in the job functions of the staff of the two universities, hence the difference in compensation. However, closer examination revealed that members of staff of both institutions are required to do research as well as teaching.

The Ministers also opined that the difference could be due to the stakeholder structure, one institution being regional and the other national, the regional institution having to compete for its staff more in the international arena than the other. This argument could stand, however, if the decision was left to the market and not the state. There is no empirical evidence to support the notion. The issue of salary differentials would not arise in the context of ex ante pricing and the lack of state involvement in the HE negotiation process. This would allow the institutions to negotiate on the basis of ability to pay. Government's involvement in the compensation issue and its input funding strategy are the causes of the continued salary parity disputes.

A change from negotiated ad hoc input funding to formulaic input funding could possibly solve the salary-parity problem. The money follows the student concept could result in

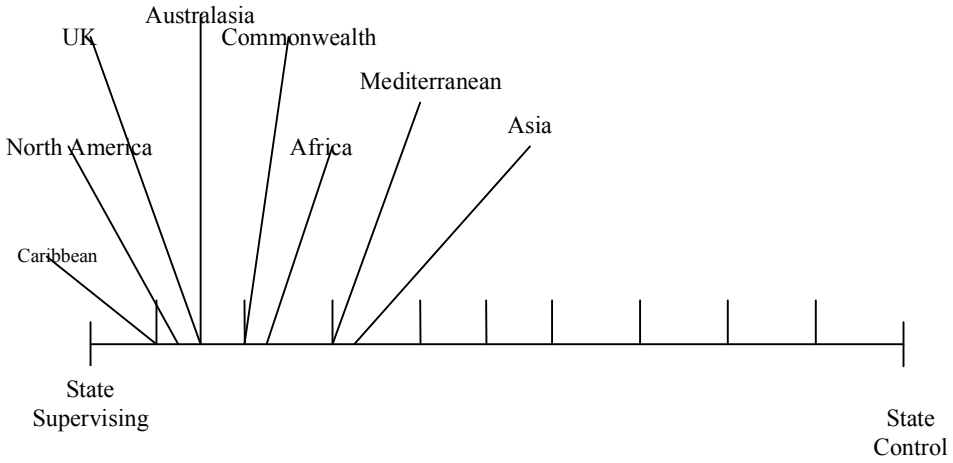
funding by enrolment rather than expenditure categories. This, however, would not address the efficiency or quality issues. Institutions could achieve increase in funding by simply increasing enrolment and be unconcerned about the quality of delivery or the amount of time it took for a student to graduate. The experience of the Czech Republic that was forced to include an output factor in its funding model to encourage better completion rate is cited. For this reason an output method of funding would be better, as it would solve all three problems. A taxi-meter model, like Denmark's; an enrolment model with a claw-back mechanism like that of England; or the Czech system of dual input-output factors could be considered.

Jamaican RAM and Accountability

The discussion in chapter 4 argued in favour of a relationship between accountability, governance and management in public sector institutions. The point was made that the accountability model is required to create the balance between the governance requirements and the management practice. As a result, it was concluded that a balance between state supervised governance system and management by initiates could best be provided by the market type accountability model. Conversely, the balance between a state control governance system and "rule-led" management practice can be balanced by the upward accountability model.

The Governance model as suggested by the charters of the universities is that of state supervision. This was supported by the paper on "Government of Jamaica's proposal Regarding future funding of the UWI" when it was noted the state described its role as purchaser of the university's services. Based on the governance instrument (the charter) Richardson and Feilden (1997:10) placed the Caribbean university system at the state supervisory end of the Van Vught continuum, see (Figure 5.3). The positioning was done of seven regions around the Commonwealth median. The regions were United Kingdom, Mediterranean, Australasia, Asia, Africa, North America (Canada) and the Caribbean.

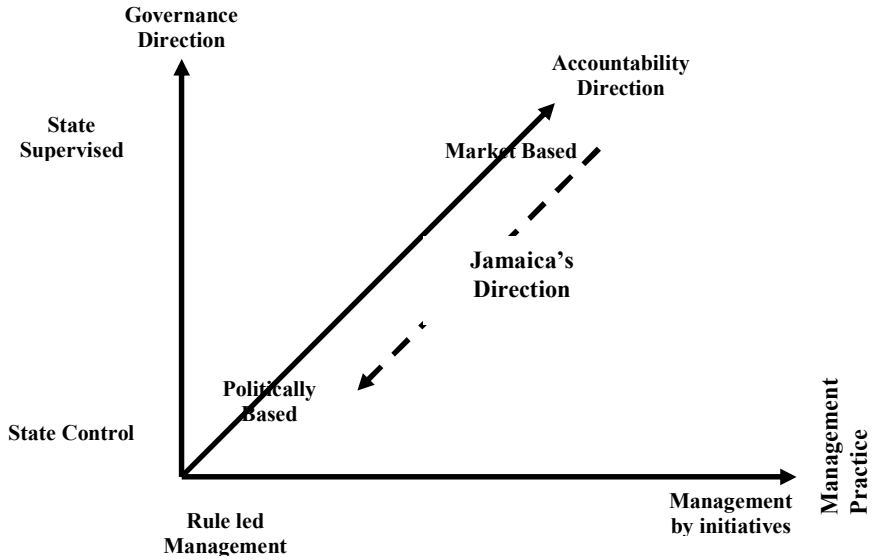
Figure 5.3: Van Vught Continuum on measuring Governance of Commonwealth Universities



Based on the notion of academic freedom, the strategic management practices of the universities and the charters, the Jamaican institutions could best function with the principle of management by initiative. The administration, therefore, should be free to make decisions based on broad-based principles and not be confined by detailed state rules and procedures.

The governance instrument and the management requirement, therefore, support a market-based accountability model for the Jamaican HE system. The data suggest, however, that the input aspect of the RAM has served to pull the HE accountability practice away from the market based accountability model to the politically based spectrum, and consequently, the governance and the management being drawn in the opposite directions to state control and "rule-led" respectively. Figure 5.4 illustrates the effects on the Jamaican HE system where the requirements for state supervised governance and management by initiatives point to the market based accountability model. However, the input-based RAM has resulted in the accountability model being pulled in the politically based direction and consequently the Governance model moving in the direction of State control and the management practice being shifted to "Rule-led".

Figure 5.4: Effects of the Jamaican RAM on Accountability, Governance and Management of HEI



The basis for the above is Ferlie et al's (1996) description of the various forms of public sector accountability models which places the Jamaican HE practice in the politically based category and specifically in the accountability upwards sub group (see Table 4.8). In the area of finance, the HEI administrations are accountable to their Councils which, in turn, are accountable to the MOE, then to Cabinet and eventually to Parliament. It was such modelling that led to the ex ante control mechanisms for procurement and salary negotiations. A recent event in the procurement of library services for UTech confirmed Ferlie et al's (1996) point that this type of system is "unrealistic given the complexity and scale of modern government and limited time and expert knowledge available to MPs". The salary negotiation system and its effectiveness have already been presented. The procurement process requires all institutions that receive government funds to be subjected to the following approval limits:

- J$4M (UK£35,000) – HEI
- Between J$4M and J$15M (UK£134,000) – Permanent Secretary of the MOE
- Above J$15M (UK£134,000) – Cabinet

Submissions were made to the MOE requesting permission to renew the subscriptions to database engines for the university's library. The submissions were returned to the institution requiring several quotations for each. This was in accordance to the rules laid down by the Parliament. The librarian had to eventually appear before the Procurement Sector Committee of the MOE to explain that in one case the supplier was the publisher,

hence, further quotation would not be necessary and the other services were being provided by the only two stable and financially sound companies in the business. It took several months to provide the explanation, during which the subscriptions for the institution lapsed and the students were left with inadequate library facilities.

With the negotiated-input system of resource allocation the GOJ has been dependent on ex ante control mechanisms to ensure adequate use of resources. As explained by Göbbels-Dreyling (2003) ex ante control assumes that the mechanisms themselves are expected to guarantee in advance that an institution will function effectively. These salary negotiation systems via the MOF and the procurement process are the chief ex ante control mechanism currently being used. The two HEIs complained that the process reduced their ability to be responsive in a timely and efficient manner to their operational demands as it takes a long time for decision making to travel the bureaucratic channels.

Jamaican RAM and HE Quality Assurance Mechanism

The RAM-Quality nexus is not as clear-cut as the association with efficiency and accountability. This is because of the difficulty in measuring quality and the possibility of the quality trap where under-funded institutions may remain with poor quality because they lack the ability to attract resources for improvement. Based on the discussion in chapter 2 the Jamaican RAM-Quality relationship will be analysed using Massy (1996) and Orr (2005). The two significant points of Massy (1996 pp.317-322) were:

1. Linking funding to performance offered good incentives to organisations that were quality conscious and operating near or at the quality frontier. This was because they would perceive that a fall-off in quality would lead to funding losses.
2. Linking funding to performance did not offer any incentives to those organisations operating far below the quality frontier provided that the enhancement necessary was sufficiently realistic.

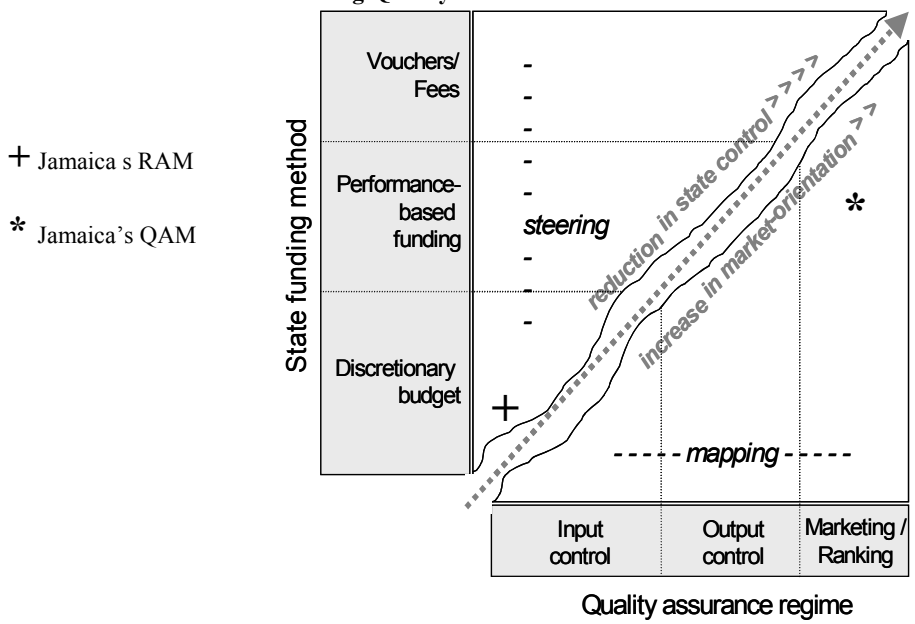
This therefore leads to two questions for the Jamaican RAM-Quality analysis:

1. What are the HEIs discretions on quality? Are they operating at or below the quality frontier?
2. Does the RAM support the HEIs discretions on quality?

A review of the accreditation reports (the case of UTech), market survey reports, and the level of international acceptance of the certifications of the two state-supported Jamaican universities indicate that they are operating at the quality frontier. This then leads to the second question of the RAM and its linkage to performance. The answer is negative as was seen previously the negotiated ad hoc input RAM was not performance driven. Three reactions are drawn from the results of the Massy analysis of the Jamaican RAM-Quality nexus. First, the HEIs may not need any incentives for performance since they are performing well anyway. However, they would lack the opportunity for reinforcing the commitment to quality. Second, it may be necessary to encourage better performance for those programmes that are close to but not at the quality frontier and as such there is no incentive for that added push. Third, there may need to be some form of encouragement to maintaining the standards of the high quality programmes rather than allowing a lapse through laissez-faire attitude.

Orr (2005) argued that the funding provided a steering function for the HEI while the quality assurance mechanisms are used for mapping or to explain the performance of the

Figure 5.5: Jamaica's Position on the Orr 2005 Trajectory of Funding-Quality Assurance link



universities. As such, he deemed that the quality assurance mechanism provided information to judge the effects of the RAM. The Jamaican RAM falls in Orr's

"Discretionary Budget" funding category. Jamaica uses accreditation as its quality assurance mechanism however participation is voluntary. The UWI for instance has not submitted any of its programmes to the University Council of Jamaica (UCJ) for accreditation. Orr explained (email May 23, 2005) that if the accreditation system is compulsory, then the state uses it as a method of controlling input as input standards would be set for the universities to achieve. If the accreditation system is voluntary then the university will choose to take part so that it can place itself better in the market. The university could also use it as a benchmark to improve internal performance but also as a marketing tool. The UWI does not suffer adversely from its non-participation in the accreditation system and it is suggested that this is because of the market's acceptance that it is the leader in the Jamaican system. Based on the above, therefore, the Jamaican quality assurance regime would fall in Orr's Marketing/Ranking category. The Jamaican positioning is illustrated in Figure 5.5.

The Jamaican RAM does not correlate with the QAM, on the Orr Trajectory. Further analysis revealed that the information provided by the quality assurance process was not directly used by the funding providers or vice versa. The answer, therefore, to Orr's second question is that the QAM does not enhance the information provided via the funding method. As Orr pointed out "it may be seen as appropriate to assess the longer-term effects of the funding on quality of HE performance". The analysis on the Orr trajectory supports the analysis of the RAM's effect on the accountability-governance-management relationship. Both analyses support the view the RAM points to direction of state control governance. State control governance is contrary to the charters of the Jamaican universities, hence, here again it is suggested that the RAM is unsuitable to the context. With regards to Orr's second question of the use of the information by the steering and mapping mechanism, it is observed that there is a duplication of effort in the Jamaican HE system as a result of a lack of correlation between the two. The ex ante control mechanisms to track the use of funds has not informed the authorities about the effects of its funding on the quality of HE.

The Massy (1996) framework suggests that it may be necessary for the Jamaican RAM to offer some incentives for adhering to quality and the Orr (2005) analysis points to the need for direct links between the Quality Assurance Mechanism and the RAM at least to ascertain the effects of the funding on the quality of HE.

Conclusion

The deliberations in this chapter have been to assess the questions posed in the introduction. The answers will be summarised by addressing the questions more directly. The first set of answers is about the questions dealing with the financing of HE:

- Why was it considered necessary to adopt the free education policy?

  The free education policy was adopted because of the then government's wish to increase access and the belief that such would be achieved with the egalitarian approach. Prime Minister Michael Manley articulated the view in his speech to parliament and his responses to reporters' questions. Free education was thought to provide equal opportunity for everyone regardless of social status to access HE. Under this circumstance it was believed that no one would be concerned about the availability of funds to finance the cost.

- Why was it considered necessary to change the free education policy?

  The free education policy was unsustainable as it led to operational deficit for the HEI, contributed to the economic problems of the country and caused financial hardships for the single HEI of the time. Furthermore un-sustainability was as a result of the country not meeting the preconditions necessary to provide equity and market efficiency.

- Why was it considered necessary to change the policy of the cess?

  The Cess had to be abandoned because it was not designed to address the real issues of the pre-conditions necessary. The equity and efficiency issues dictate pre-conditions to the financing options. The cess was devised to provide the government with funds. It was also a guise to suggest that the free education policy was continuing.

- What are the current concerns with the cost sharing policy?

  The current policy of cost sharing has not sufficiently addressed the issues of equity and efficiency because of the continuation of the strategy of cost and price control. There is still lack of equity in access because of the different treatment of students depending on whether the institution attending is regionally or nationally owned. This led to different payment structures for the students. The regional/national ownership structure has also resulted in different levels of subsidies to the HEIs.

To the questions about the RAM the answers are as follows:

- What is the classification of the Jamaican RAM?

  The Jamaican RAM for HE is classified as an Ad hoc-negotiated-input model. This is according to the RAM debate pendulum. There is a different negotiation process for the regional as against the national HEI. The regional institution negotiates at the political (policy) level and the national institutions negotiate at the level of the civil service (technocratic) level. The negotiation process is further complicated by the input element which causes direct involvement of the state in the internal affairs of the universities. Funds are not allocated on a formulaic basis thereby raising the concern about lack of transparency of the process.

- What are the intended objectives of the RAM?

  The objectives of the RAM are increased access, accountability, efficiency and quality. These have been articulated by the policy makers and are implicit in the strategies adopted for implementing various policies. The strategies are price control and monitoring of costs through ex ante measures. The strategies, however, are incompatible with the HE environment, governance instrument and management requirement, hence, the opposite results are being achieved.

- Is the model the most appropriate for the current context of the Jamaican HE environment?

  The model is inappropriate because the emanating strategies lead to results that are opposite to the objectives.

Chapter 6 will suggest changes for financing HE and for allocating resources to the HEI.

CHAPTER 6
CONCLUSIONS RECOMMENDATIONS AND REFLECTIONS

ADDRESSING THE QUESTIONS

The main question of the research is:

> What are the consequences (intended and unintended) of the different models adopted by Jamaica for the financing of HE?"

Four sub-questions followed from the main question, which were:

- What are the consequences of an unchanged financing model for a system that has shifted from a single provider to diverse providers?
- What are the consequences of financing both a national higher education system and a regional one?
- What have been the philosophical underpinnings of the allocation of resources to HE in Jamaica?
- What models are available to the Jamaican government for allocating resources to HE?

The questions were addressed in detail in the body of the research and are now summarised. The intended consequences of the various financing policies were to improve access, especially for the poor, allocate resources to the HEIs efficiently, and provide institutional flexibility and sustainability for the HEIs. The intention to improve access was communicated especially by the free education policy of the 1970s, the introduction of changes to the student loan programme and the implementation of the scholarship and grant programmes. The signals about allocative efficiency were communicated by the various formulae instituted to share the cost of the operations of the regional HEIs, the policy changes from free education to the cess and then to cost sharing and the introduction of the UGC and subsequently the CGC as channelling mechanisms for the state funds. The practice of granting the funds as block grants indicated the intention for institutional flexibility and sustainability for HEIs.

However, in addition to, or instead of, the desired consequences there were several unintended consequences such as capacity constraints, contradictions between the governance requirement and management practice, financial difficulties for the country and

the HEIs, inefficient allocation of resources, inequity in access to HE, inequity in the allocation of resources and threat to the quality of the programmes (chapter 4).

The unintended consequences of inefficient allocation of resources and inequity of access were due partially to the unchanged model of allocating resources to HEIs even though the system changed from one provider to multiple providers. Under the single provider a hierarchical structure was designed to categorise education institutions according to the level of teaching. The UWI was at the top of the structure offering HE and the other institutions which did not award degrees, were ranked lower. Compensation was arrived at based on the institutions' position in the apex structure. A different negotiation process was also designed for the only HEI as against the other TLIs. When the system changed to multiple providers the institutions that previously had inferior mandates remained in their categories for the purpose of compensation. The reason given was that the regional institution should be treated differently from the national ones. The maintenance of improved compensation packages and the separate negotiation mechanisms on the basis of regional versus national ownership also contributed to the unintended consequences of inequity and allocative inefficiency (Chapter 4).

It was also recognised that the unintended consequences were due to some of the philosophical underpinnings of the RAM. The philosophy of egalitarianism led to the free education system of the 1970s and 1980s. The country, however, did not satisfy the preconditions for such a system and this led to the financial difficulties, inequity and inefficient allocation of resources. Another philosophy was efficiency through cost containment and price control. This led to the practice of ex post pricing where cost is equal to price. It was demonstrated that such a practice led to restriction in capacity as well as resource constraints. There were also the conflicting signals of state control and state supervision. The charters of the universities stipulated that the governance requirement was that of state supervision. This was supported by the practice of block grant funding. The analysis showed that the practice of LIB (ad hoc-negotiated-input RAM) led however to the politically-based accountability model which, in turn, caused the governance mechanism to move to the state control end of the pendulum and the management practice in the direction of rule-led rather than management by initiative (Figure 5.4).

In financing HE the government had the options of total state financing, privatisation or shared responsibility. Within the arena of shared responsibility there were the further sub-routes of upfront charges with a mortgage type loan or ICL to support poor students or deferred payment, with graduate taxes or ICL. In distributing the funds, the country had the option of formulaic funding either by enrolment or graduation rate or it could have adopted the fixed formula approach. Formulaic funding by output, however, was deemed to be the best option for accountability and supporting efficiency and quality (Chapter 2).

THEORETICAL UNDERPINNINGS

The assumptions underlying the examination of the data and answering the research questions were:

- HE is not a purely social good but provides both social and private returns.
- The purpose of the state involvement in HE within the context of a market economy is to ensure equity and efficiency (Barr 2004).
- The principles of equity and efficiency lead to protecting those programmes with high social and low private returns from the disappearing market.

The consequences were analysed against the conditions precedent and the RAM debate pendulum, and given the above assumptions, the following are the conclusions:

⇒ Cost containment strategies restrict access because quantity is a function of cost. This was demonstrated by the application of the breakeven analysis and the results of Jamaican experience of using this strategy for over forty years. The cost containment strategy did not allow the institution to build its capacity in order to respond to demand.

⇒ Ex post pricing restricts managerial action and initiative because under this system price is equal to cost and hence the HEIs do not benefit from efficiency gain. This was concluded from the analysis of the financial problems of the HEIs over the period studied. The assessment of the marginalist pricing strategy as suggested by Douglas (1992) also points to this conclusion.

⇒ Cross the board subsidy leads to inequity as those in the higher earning categories derive more benefits. This is concluded from the analysis of the SLC data by James et al (2005) which also supported the earlier works of Mignat et al (1985), Eicher (1998), Jacobs (2002), Gradstien (2003) and Barr (2003 and 2004).

⇒ The preconditions for total state financing of HE are central planning and control. If the function of government is to ensure efficiency in the allocation of resources and equity of access then it would have to assume total control to ensure that no individual is at an advantage over another because of the use of state funding.

⇒ The RAM can direct the accountability-governance-management relationship. This was demonstrated in chapter 5 where it was shown that notwithstanding the enabling legislation and the management requirement the RAM has resulted in the financial operations of the HEI behaving as if it is an agent of the state.

⇒ Government will find it difficult to justify paying HEI staff different levels of salaries based on regional versus national ownership as long as the institutions have the same mandates and missions.

⇒ Upfront charges with mortgage-type loans do not adequately address the issues of equity of access to HE. This is because of the high cost of borrowing and collateralised lending policy result from the high risk of non-payment.

The conclusions form the philosophic underpinnings to changes to the financing and resource allocation methodology for HE in Jamaica. Given the assumptions and conclusions therefore, changes are proposed as hereunder.

RECOMMENDATIONS

Recommendations for Changes to the Financing of HE

First, the policy of "cost-sharing" should be changed to "social support" for HE. Cost is the responsibility of the supplier and the Jamaican Government has determined that its role is that of a purchaser of the HE service (MA 02.20, Nov. 1995). As a purchaser the state should be concerned about price, which is the mark-up of cost. It was illustrated with the break-even analysis (Table 5.3) showing that a cost containment strategy leads to restriction of access. This strategy also led to the accountability mechanism pulling the HE system to rule-led management and the governance arrangement away from state supervision to state control (Figure 5.4).

A "social support" policy could lead to a change in the nature of the state's relationship in the HE market. The notion of support conveys the idea of assistance with payment; hence, a change would shift the state from a cooperative relationship with the institution to one

with the population in general. Such a change is even more necessary as the HE environment changes from a single provider to multiple providers.

A policy of "social support" would also allow the state to determine its own priorities because it would enable the resources to be channelled according to stated intentions. The specific way in which cost sharing is shaped in Jamaica does not allow for targeted support because the attention is on institutional survival rather than on the individuals and programmes that are in need of assistance. With a social support policy the state could direct its resources away from those with high private and low social returns towards those with high social and low private returns thereby avoiding the problem of the disappearing market.

Second, the state should abandon its cost containment strategy and allow the HEIs to manage their costs. This follows directly from the first recommendation. The cost containment strategy was the reason for the state's continued involvement in salary negotiations of the staff of the HEIs even though they are not employees of the state. As a result, the state cannot plead inability to pay when it compensates the staff of one institution at a higher level than the other. The issue is more complicated when the institution with the higher level of salary is also complaining that it is unable to attract staff on the international market because of the salary restriction that is placed on it by the governments of the Caribbean.

The abandonment of the cost containment strategy should put an end to the salary-parity disputes that have been dogging the Jamaican HE arena for over twenty years. It was pointed out in chapter 5 that the salary differential was a major reason why efficiency cannot properly be measured in the Jamaican HE environment.

As argued in Appendix XV, activity-based costing (ABC) is the most appropriate costing strategy for educational programmes. If the state, according the Cabinet's decision of October 31, 1994, truly allows the HEIs to freely negotiate with their staff then this area of cost could be considered along with the others as being on competitive ground. ABC could then be used to ascertain the cost of each programme and the results to be benchmarks in measuring institutional efficiency. As it stands, a comparison could not give a true picture of efficiency because staff cost which is the major portion of

expenditure is managed artificially. It could also be argued that the per student cost was lower for one HEI because of the imposed lower salary and not through efficient use of resources.

Thirdly, it is recommended that the HEIs should practice ex ante pricing. Chapter 5 charged that the current practice of ex post pricing is inefficient, leads to complicated arrangements, minimises HEI managerial responsibilities, and contradicts governance requirement. Institutions should charge fees based on their estimates of cost plus a mark-up. The mark-up should be used for future expansion and development, with particular emphasis on quality improvements. The consumers who in this case would be the state and the direct beneficiaries would be persuaded to accept the pricing structure based on (1) the expected improvement in employment prospects and the expected social rate of return in the case of the state, and (2) the expected improvement in individual employability and private returns as well as the related ability to pay in the case of the individual. This implies a strong marketing effort on the part of the HEIs and decisive efforts to keep down costs or raise quality.

Douglas (1992) outlined the cost-plus pricing formula as:

$$\mathbf{P = AVC + X\ (AVC)} \qquad \mathbf{(6.1)}$$

where P is Price; AVC is Average Variable Cost; X is the Mark-up percentage chosen

By substituting AVC for Per Capita Cost (PCC), the pricing formula could be rewritten as follows:

$$\mathbf{P_p = PCC_p + X\ (PCC_p)} \qquad \mathbf{(6.2)}$$

or

$$\mathbf{P_p = PCC_p\ (1 + X)} \qquad \mathbf{(6.3)}$$

where subscript p represents the specific programme

The issue then becomes the matter of determining X. In equation 6.1, Douglas (1992) determined X by using the price elasticity of demand. In chapter 2 it was observed that the tuition fee is inelastic therefore price elasticity cannot be the factor to use in estimating X. James advocates that instead of price elasticity, the expected social rate of return (r) should

be used to estimate X. He outlined the process for calculating the substitute for r, which he deemed to be approximated by the internal social rate of return (ISRR) over the working life of the people currently receiving HE (Interview, March 25, 2005; James et al 2004).

The first step is to calculate the net present value (NPV) from the date of initiation of the investment flow. Here,

$$\mathbf{NPV} = \sum_{y} \frac{(R-C)}{(d+r)^{y}} \qquad \mathbf{(6.4)}$$

where R = Expected revenues (Wages and other benefits). Taxes and work with social returns are excluded at this stage.

C = Cost of education defined to include direct outlays by the state and the individuals being educated, and the economic costs of wages and other earnings foregone because of the investment.

d = Depreciation (or replacement) rate and is usually set equal to 1.

r = Internal social rate of return.

y = Expected number of years of working life (or benefit).

If taxes and other social benefits and costs are excluded, the above formulas result in the private rate of return. However, this rate is perhaps better estimated by regression methods, as in the work of James, et al (2004) and James (2005) on Jamaica.

The second step is to find the IRR that is the value of r such that the NPV is equal to zero. This is done with the NPV formula by manipulating (r) until NPV is zero. The estimated IRR would then be used as the substitute for X. Equation 6.5 would then be used to calculate the general price.

$$\mathbf{P_p = PCC_p\ (1+\ IRR_p)} \qquad \mathbf{(6.5)}$$

The price would be the return to the HEI. The government would pay a portion and the students the balance, depending on how the private and the social rates balance and depending on government's capacity to fund its social policy. The determination of the state's portion will be discussed more fully in the recommendations under the RAM. If fees are set according to this recommendation then there would be less need for price control and the state could allow variable fees, which could be regulated. This would be in line with state supervised governance mechanism as dictated by the various charters.

Since the private rate of return is an attractor to the individual student, then fees can be allowed to vary in various programs according to how the private rate differs from the social rate. With variable fees, the HEI would be able to compete on quality. Students would pay higher fees based on their perception of the quality of institutional offering (Barr 2003b; James, 2005). This would also fit within the Orr (2005) trajectory where the QAM of marketing is consistent with the fee payment system.

Mark-up pricing would also enable the HEIs to sustain themselves since the margin can be set aside for infrastructure improvements and equipment replacement and or staff training and development. Instead of waiting for funding from the state for building capacity each institution would be able to set aside in an incremental fashion for its future. If the need is immediate then the institution could use the mark-up information in a cash flow projection to negotiate funding from financial institutions.

Jamaica's assessment against the conditions precedent chart (Figure 5.5) indicates that in order to assist needy students, it has only met the conditions for up front charges with mortgage type loans. For this reason the recommendation is being made to continue this policy for the medium term. Efforts, however, need to be made to move the country in the direction of providing income contingent loans to ensure a more favourable equity of access to HE. This would mean improving the tax management and collection system to track all citizens. It would also mean building a reserve so that the country can deal with the up front payments to the HEIs pending the repayment from the beneficiaries. The risk-pooling scheme would also need to be in place to deal with inability to repay.

For the medium-term, support should be given to James' (2005) recommendations to assist the poor to access HE.

- Government to guarantee the loans for the poor instead of requiring them to have private guarantees. This is the major hindrance to their participation and has allowed the benefit to go to the richest quintile.
- The grant that is provided to assist the poor should be adjusted annually in line with inflation. This would allow them to maintain value. The amount has never been adjusted since it inception in 1996.
- Loans should be provided to cover living and material expenses during the course of study.

Recommendation for changes to RAM

Privatisation and demand-driven RAM achieve the same results because they enable the individual to make the decisions, choose the programmes and signal to the HEIs what should be offered. The arguments proffered against privatisation and demand-driven RAM were discussed in chapter 2. The disadvantages suggest that Jamaica should continue supply-side resource allocation to HE. Block grant funding should also be continued because it enhances institutional flexibility. However, these mechanisms should be supported by changes in the production/transparency aspect of the RAM (see RAM debate pendulums, Figure 5.2)

First, the country should adopt formulaic funding and abandon the ad hoc-negotiated-input funding arrangements. This would convey the notion of objectivity in the allocation and provide mechanisms that would better support quality, efficiency and accountability. Fixed formulae funding is not considered appropriate because it does not support quality, efficiency and accountability. The question then is, should the formula be input-driven, output-driven or should it have elements of both input and output? It was argued in chapter 2 that output-driven formulae provided the best basis to judge accountability, efficiency and quality.

Output RAM, however, may result in cash flow difficulties for HEIs and may pose an ethical dilemma. The cash flow problem could arise because payments for outputs are after processing is complete and expenses are incurred. The institutions would require advance funding to undertake its teaching and research and would be required to claim afterwards. If advance funding is not provided then the HEI may be forced out of

operation. If it has to borrow then the cost would increase the cost of education. The ethical dilemma may be caused by the temptation of HEIs to pass students simply for the sake of funding and not be concerned about the quality of the education. These issues have caused some scholars to advocate the use of enrolment formula funding. This type of funding, however, has the problem of inefficiency as countries practising this RAM have identified that under this system throughput and completion rates are poor. The Czech Republic adjusted its enrolment formula to include an output element for this reason.

The Czech Republic and England are two of the countries that have attempted to address the above concerns from different perspectives. The Czech solution is to have a formula with both input and output factors (see equation 6.6).

$$\mathbf{A_{HEI} = (base * C_i * N_{rstu}) + (N_g * base_g)} \qquad \mathbf{(6.6)}$$

Where base = The amount determined per student/graduate per year

C_i = Co-efficient of the programme

N_{rstu} = Number of students in an accredited programme

N_g = Number of graduates

The programmes are grouped into seven clusters according to cost. The study in the humanities for instance has a co-efficient of 1, arts a co-efficient of 5.9 and an English language course, 3. The first element of the formula is input-related as it is based on enrolment while the second element is output-related as it is based on the graduation rate. The result is that partial funding is provided for the student who is enrolled but the balance is not paid until he completes.

A simplified mathematical representation of the English system is the first part of equation 6.6 which forms the basis of the initial remittance to the HEI. To address the issue of completion rate another element is added to the formula to reduce the amount of subsequent grants if "the institutions are unable to recruit or retain the numbers of students for which the previous year's grant was allocated" (HEFCE 2003 p.13). In the English case therefore the claw-back mechanism results in non-funding of incomplete students. By providing the funds by enrolment the English system, therefore, addresses the cash-flow needs of the institution and the claw-back mechanism transforms the arrangement into an output system. The ethical dilemma is addressed not by the funding formula but by the

QAM which tests the evaluation systems of the HEI. If Jamaica is to adopt the English system then it has to ensure that the RAM is consistent with the QAM (Orr 2005).

Second, the state should de-link subsidies from the apex classification and students' portion. The ad hoc-input-negotiated RAM is linked to the apex classification system where institutions are pre-classified and funds negotiated according to their position in the structure. This may have been suitable to a system with one HE provider and the other TLIs offering programmes below the HE level. It must, however, be recognised that there are now multiple providers which makes it difficult to justify different financing levels for institutions with the same mandate and function. Linking subsidies to fees suggests that whatever the charge, the balance must be provided by the state. In an atmosphere of resource constraints, however, this is not always possible, thereby forcing the HEI into deficit financing, as was seen from the Jamaican experience (Chapters 4 and 5). It is therefore proposed that funding be allocated to HEIs according to the following factors:

- Support level – The number of students the state is willing to support according to the manpower projections. The planning authority may, for instance, project that in the next ten years 20,000 doctors, 10,000 engineers, 60,000 teachers in specific subject areas and 20,000 business professionals will be needed in the country. Based on age and other factors of those currently in the system, the migration patterns of the country, attrition and other characteristic of the professions, calculations can be done to determine the amount of persons to be trained for the various professions to meet the projected demand for the ten year horizon. The government therefore can determine the support level through this process. State or any kind of funding should not be open-ended but be linked to plans. The purpose of the state in HE as stated before should be to ensure equity of access and protection of the social programmes and this is a mechanism to perform these functions. Support level because of its importance in planning national needs should be a major factor in determining resources to HEI.
- Price weighting – The relative price of programmes with each other should be another factor because all programmes do not cost the same and are charged different prices. To guard against cross subsidisation and to encourage equity then relative pricing should be built in the formula.
- Priority factors – The level of importance of the particular profession to the society is the third factor. This is proposed as a means to protect the social programmes

and to safeguard against the disappearing market. If teachers or social workers are important to the society yet such professionals earn relatively low salaries then high priority coefficients could be placed on those programmes thereby ensuring that more resources are directed to support those programmes.

- Resource level – The total amount of funding available for allocation should also be a factor since resources are limited.

Table 6.1 illustrates how such a system would work in relation to allocation for teaching.

Table 6.1: Illustration of allocating funds for teaching to HEIs

Clusters	Support Level (D)	Price Weights (C)	Priority Weighting (p)	Relative Numbers (D*C*p)	Allocated Amounts	Amount per Student
A	750	4.5	1	3,375	375,000,000	500,000
B	2,000	2	1	4,000	444,444,444	222,222
C	5,000	1.5	0.75	5,625	625,000,000	125,000
D	10,000	1	0.5	5,000	555,555,556	55,556
	17,750			18,000	2,000,000,000	

In Table 6.1 it is assumed that the state will fund 17,750 students in HEIs. The support is distributed according to four programme clusters. The prices of the programmes relative to each other are in column 3 showing a relation to cluster D. Column 4 shows the priority weightings where the programmes in clusters A and B are deemed to be most important, hence, they are given a priority weighting of 1 each. The values placed on the other clusters signify their relative priority. It is also assumed that only J$2B are available to the HE sector. The amounts allocated to each cluster (column 6) are calculated as per equation 6.6.

$$A_p = \left\{ \frac{(D * C * p)}{\sum(D * C * p)} \right\} \text{Fund Pool} \qquad (6.7)$$

A_p is the allocation per programme cluster.

Each institution would be allocated funds based on the number of students it has in each cluster at the rates specified in the table. The total amount of funds available for HE would be determined by the government based of the resources it has at its disposal and the other functions that it must provide to the country. The contribution per student would be calculated as per equation 6.8 and shown in Column 7 of Table 6.1.

$$CS_p = A_p/D_p \quad (6.8)$$

CS_p is the contribution per student and D_p is the number of places in the cluster that the government would support.

Institutions would thereafter be allocated resources based on the number of students per cluster that has been awarded. Equation 6.9 would be the final stage in the process.

$$A_{HEI} = (CS_c \ X \ D_{HEI}) \quad (6.9)$$

Where A_{HEI} is the allocation to the particular institution, CS_c is the contribution per student for a particular cluster and D_{HEI} is the number of places in the cluster that the state would support for the particular HEI. See Table 6.2 for illustration.

Table 6.2: Illustration of the final allocation to HEI

Cluster	Contribution per Student	Places Awarded to HEI	Allocation
A	500,000	250	125,000,000
B	222,222	1200	266,666,667
C	125,000	2000	250,000,000
D	55,556	4000	222,222,222
		7450	**863 888 889**

In Table 6.2 it is assumed that institution X was awarded 7450 places; 250 in cluster A, 1200 in cluster B, 2000 in cluster C and 4000 in cluster D. Of the J$2B it would be awarded J$864M based on the methodology outlined above.

The model is called the relative weighting resource allocation model of RW-RAM. This is because the allocation is determined on the bases of factors that are relative to each other.

The following are adjuncts to the recommendation on de-linking subsidies for institutional bias and fee levels:

- The fund pool is to be adjusted annually by the rate of inflation to ensure that the value to the institutions is not depleted over time.
- Any increase in the support level should be accompanied with a proportional increase in the level of the pool. This is also to ensure that the value is not depleted over time at the expense of the HEI.
- HEIs would have the freedom to charge variable fees and to fill excess capacity with full fee paying students. This would allow for an extra source of funding for improving quality and maintain or improving its efficiency levels.

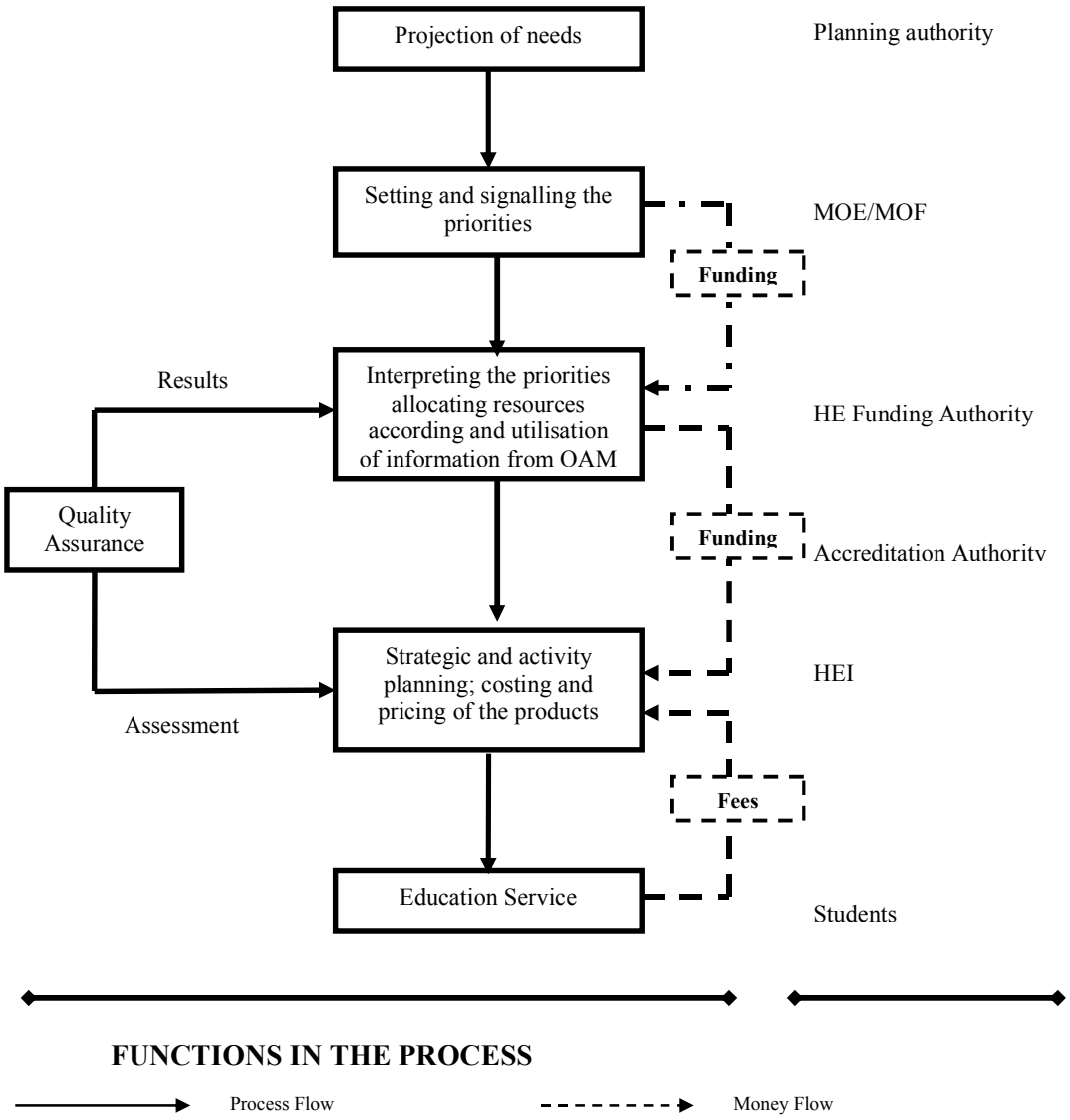
- Price and priority weightings should be determined empirically in order to guard against subjectivity.

Third, there is to be separate funding for research. HE in Jamaica is defined in relation to teaching and research; hence, such institutions should be funded accordingly. There is much debate about the inter-relationship between teaching and research. Those who think that they influence each other also believe that there should not be a separate funding arrangement for each. Research output, however, is assessed differently from teaching output and is easier to quantify. It is recommended that the country adopt the English system of allocating funds for research where allocation would be based on funds level, price weighting, research active staff and quality rating (HEFCE 2003).

Fourth, it is proposed that there be a unified process for allocating resources to HEIs, regardless of whether they are regionally- or nationally-owned. The current difference in treatment is a result of the historical roots of HE in the Caribbean. Conditions dictate equal treatment for the regional as well as the national institutions. Both are committed to the national development of, and have the same mandate for, Jamaica. It is therefore irrational and inefficient to maintain a direct resource allocation process for each. As such, it is recommended that Jamaica establish a Higher Education Funding Authority (HEFA) with the following terms of reference to:

1. manage the allocation of the state's funding for teaching and research to HEIs,
2. monitor the financial activities of the HEIs on behalf of the state,
3. advise the government on the level of the resource pool,
4. propose adjustments and changes to the RAM,
5. assess the effects of the level of funding on the quality of HEI performance,
6. regulate the pricing of the HE programmes,
7. interpret the state's priorities in relation to manpower needs (in relation to assigning the priority co-efficient) and
8. provide benchmarking information against national and international targets for Jamaican HEI performance

Figure 6.1: Proposed Unified Process for Resource Allocation in the Jamaican HE System



The proposed unified process is illustrated in Figure 6.1. The planning authority is expected to signal the future manpower needs of the country. This would be set in the framework of the country's long-term projections. The Ministry of Education would thereafter extract from the central long-term plan, the medium-term goals of the government. These would be communicated to the funding authority as the priorities of the government for the specific period. The funding authority would thereafter assign the

priority weighting to the particular educational programmes and indicate the number of HE places that the government would be supporting. It could also negotiate the level of the funding pool with the Ministry of Finance and calculate the amount of contribution per student that the pool would provide.

The HEIs could then bid for places and be funded according to the number of places awarded. The students through their own private resources or by way of the students' loan scheme would be expected to finance the difference between the contribution provided by the government and the price being changed by the HEIs. Similarly to the English system, it is proposed that the HEIs enter into a contract with HEFA to produce at least the number of students awarded and if they fail to do so then refund to the state would be expected. It is also proposed that if the institutions have excess capacity over that which is supported by the state then this could be awarded to full-fee paying students.

Figure 6.1 also suggests that the QAM should be a part of the RAM where funding is only awarded for programmes that are accredited. This would be similar to the system in the Czech Republic.

REFLECTIONS

On reflection, the research has raised the level of academic and professional development of the investigator. These are summarised under the following headings

- ⇒ Research methodology
- ⇒ Higher education management
- ⇒ Resource allocation in HE

Research Methodology

The first issue the researcher faced was wrestling with the role that epistemology should play in the research. It was difficult to agree with the view that one's personal knowledge claim should determine whether one uses quantitative, qualitative or mixed method research. This was the view of Creswell (2000). Eventually the approach that seemed

logical and reasonable was that of being driven by the research question. Punch (1998) argued the latter point. However, the debate about epistemology as a prerequisite to research is still not answered in the researcher's mind. This could be due to nature of the research that was undertaken and the belief that knowledge claim as a basis for the methodology seems to be more applicable to basic rather than applied research. Basic research is "to gain more comprehensive knowledge or understanding of the subject under study without specific applications in mind" (www.genomicglossaries.com/content/research_genomics.asp). Applied research "is done to solve specific, practical questions; its primary aim is not to gain knowledge for its own sake" (encyclopedia.laborlawtalk.com/Researcher). The objective of applied research to solve specific and practical questions suggests the appropriateness of the research question driving the investigation rather than epistemology. The experience of this research project, therefore, though not settling the epistemology debate, has led the researcher to believe that the Cresswell approach fits basic research while the Punch suggestion is more suitable for applied research.

After the decision about the approach to the research, the next issue was getting the research question right. It was first thought that the focus should be on developing a model for funding HE in Jamaica. As a result, the question that was developed was, "What model should the Jamaican government adopt for the financing of HE?" That would have assumed that whatever was in existence was inappropriate and hence prejudicial. It was eventually decided to investigate the Jamaican practice and allow the investigation to determine the issues at the various stages and the eventual recommendations. This objective led to the question about the consequences of the various models used by the country. The lesson about the importance of the research question was therefore a major development for the researcher.

The project also enabled the researcher to learn the techniques involved in using grounded theory to do research. The use of the inductive logic technique and the coding of qualitative data were learnt during the project. Other techniques for analysing data and developing frameworks for probing data were also acquired. As a result, the conditions precedent chart, the RAM debate pendulum and the governance-management-accountability trajectory were developed. A problem that was encountered in the initial stages of analysis was to understand Strauss and Corbin (1998) coding procedures and to

determine when one was doing open, axial and selective coding. In reviewing Flick (2002) circular model of the research process the issue was eventually solved. It was decided not to concentrate on the types of coding but to realise that the analysis was going through several stages of data collection, interpretation and comparison until conclusions were reached.

Higher Education Management

The research also wrestled with some of the questions about the management of HEIs. These included questions such as

- ⇒ What is the role of the administrator versus the academicians in an HEI?
- ⇒ Are academics automatically qualified to be administrators of HE?
- ⇒ Is there a need for specific training to be an administrator for HEI?

The research revealed that there are links between the various disciplines and an appreciation of such links can assist the management of HEIs to address the various problems that are encountered. The research was about a financial issue but in examining such an issue there had to be consultations from perspectives such as economics, accounting, strategic management, human resource management, change management and governance. For this reason it is thought that there should be generic training programmes for HE administrators so that the clear links can be identified and capabilities can be improved for the effective administration of HE.

It is a common practice in the management of education institutions in Jamaica to only promote good teachers and researcher to leadership. Sometimes this is done to the detriment of the individuals and their institutions because they were not equipped to manage. The observation is also made that those individuals with only management training may not understand the dynamics of the educational environment and may lead the institutions in the wrong direction. The research however suggests that regardless of the professional orientation of the leadership of HEI (pedagogic or pure management) there must be a point where supplementary training is required. The educational professionals need management training and the management professionals need to understand the principles and processes of pedagogy. Specifically, this researcher is from a finance/management background and had to understand the educational principles in order

to address the problems of financing and resource allocation to HEI. The research also showed how economic principles such as elasticity of demand, financial concepts such as net present value (NPV) and rates of return and managerial accounting concepts such as activity-based costing (ABC) can be used to address issues in the management of educational institutions.

Resource Allocation in HE

Probably the most important lessons had to do with the philosophical underpinnings to resource allocation at the systems level and its link with the overall financing of HE. At the outset it was thought to limit the scope of the research to resource allocation. However, because of the primacy of the research question, it was realised that consideration had to be given instead to the total issue of financing HE before focusing on the narrow angle of how the funds are channelled.

The analysis of the philosophical underpinnings to resource allocation also led to the development of the RAM debate pendulum. The conditions precedent chart and the decision tree for the financing options resulted from the examination of the issues of equity of access and efficiency in the use and allocation of resources. It is now realised by the researcher that financing HE and allocating resources to HEIs are more than mathematical functions because the philosophy should first be determined in order to direct the development of the mathematical functions. It is the intention that drives the formulae for allocation and distribution. The recommendations contained in this chapter resulted from this realisation.

Also, in examining the issue of financing HE a question of whether the matter should be treated as an art or a science is raised. As an art the emphasis is on negotiation skills in the resource allocation process. The negotiation skill and the relative political position of the HEI leadership are important in a system where the resource allocation is treated as an art. The amount of resources that the leader is able to attract for his institution is dependent on his ability to persuade. In the formulae funding environment as is recommended by this study financing HE would have to be regarded as a science. Manpower planning and projection, rates of return analyses and costing and managerial principle are more

important to attract income (funding and demand for the product). Such an environment would also require more formal training for the HEI leadership to enable positive results.

CONCLUSION

Higher education has undergone considerable changes in its reach and delivery mode since its introduction to the Caribbean in 1948. Notwithstanding the changes in the programme and academic contents the government of Jamaica has maintained only one model of resource allocation to the HEIs and has tried four modes of financing HE. The government has also implemented several bureaucratic structures to ensure a link between its resource allocation model and the issues of accountability, institutional efficiency and quality. This thesis

⇒ Analysed the different financing methods adopted against those available

⇒ Explored the various RAMs available and their links to accountability, efficiency and quality

⇒ Identified and examined the RAM used in Jamaica

⇒ Considered the consequences of the financing and resource allocation methods

⇒ Recommended changes for the Jamaican system

It is hoped that the study will assist the HEIs and the government of Jamaica to address the issues identified, understand the changes necessary and implement the recommendations accordingly.

APPENDIX I
ALLOCATIONS TO JAMAICAN TLIS SINCE 1995

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002	2002/2003
	Ja $ '000							
UWI	1,373,491	1,808,623	2,593,979	2,103,719	1,731,142	1,612,698	1,623,671	1,623,671
UTech	167,524	299,962	500,958	972,110	542,747	674,668	835,057	825,057
	1,541,015	**2,108,585**	**3,094,937**	**3,075,829**	**2,273,889**	**2,287,366**	**2,458,728**	**2,448,728**
College for Visual & Performing Arts								
Edna Manley College	38,660	60,948	76,321	79,353	84,740	84,581	102,914	102,914
College for Agricultural Education								
CASE	57,997	86,088	129,817	152,796	159,534	129,295	170,897	166,497
Multi-Disciplinary Colleges								
Brown's Town								
EXED								
Knox								
Montego Bay				**Break out not available**				
Portmore								
Moneague								
Bethlehem								
	176,997	263,845	339,455	319,448	379,685	405,732	485,560	474,744
Teachers' Colleges								
Church	26,408	38,185	45,234	47,445	51,007	51,823	63,639	61,919
G.C. Foster	17,053	25,687	29,726	29,768	30,705	32,009	48,726	47,810
Mico	69,149	98,176	122,219	119,549	130,555	136,146	149,678	146,424
St. Joseph's	22,345	32,026	37,830	37,451	40,526	43,317	53,572	52,066
Shortwood	38,181	55,310	68,227	67,469	75,288	77,675	90,601	88,538
Sam Sharpe	26,253	36,065	45,902	45,883	51,182	52,194	62,359	60,126
	199,389	285,449	349,138	347,565	379,263	393,164	468,575	456,883
	2,014,058	2,804,915	3,989,668	3,974,991	3,277,111	3,300,138	3,686,674	3,649,766

Source: Estimates of Expenditure, Ministry of Finance and Planning, Jamaica

APPENDIX II

ENROLLMENT IN JAMAICAN TLIS IN SINCE 1995

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002
University Education							
UWI	7,704	7,867	8,543	8,689	10,421	8,571	9,969
UTech	6,832	7,129	6,268	6,009	7,550	6,540	6,733
	14 536	**14 996**	**14 811**	**14 698**	**17 971**	**15 111**	**16 702**
College for Visual & Performing Arts							
Edna Manley College	734	922	536	294	268	342	177
College for Agricultural Education							
CASE	573	536	329	672	690	716	610
Multi-Disciplinary Colleges							
Brown's Town	1,084	1,094	1,100	769	713	713	792
EXED	2,852	2,411	2,142	1,953	1,787	2,038	1,811
Knox	1,385	1,519	1,519	1,405	1,345	1,393	1,888
Montego Bay	790	918	709	893	815	1,000	1,058
Portmore	1,225	861	710	1,044	868	1,052	1,065
Moneague	470	466	524	885	923	863	985
Bethlehem	396	424	459	458	628	648	642
	8 202	**7 693**	**7 163**	**7 407**	**7 079**	**7 707**	**8 241**
Teachers' Colleges							
Church	350	359	379	406	388	376	379
G.C. Foster	172	200	199	241	245	312	130
Mico	1,087	1,087	974	1,080	1,044	901	858
St. Joseph's	260	261	300	325	345	518	571
Shortwood	567	548	657	627	627	563	600
Sam Sharpe	386	386	504	563	619	669	577
	2 822	**2 841**	**3 013**	**3 242**	**3 268**	**3 339**	**3 115**
Total TLI	**26 867**	**26 988**	**25 852**	**26 313**	**29 276**	**27 215**	**28 845**

Source: Statistics Section, Planning and Development Division of the Ministry of Education, Youth and Culture, Jamaica

APPENDIX III
EXCERPTS FROM THE ESTIMATES OF EXPENDITURE RE FINANCING SECONDARY AND TEACHER EDUCATION

The following statement occurred as explanation accompanying all the provisions for secondary education:

> *This provision is intended to finance the operations of 40 grant-aided high schools to the extent that the Government has accepted liability for such financing. All these schools are managed by Boards of Governors and receive some revenue from fees payable by fee-paying students. The bulk of their revenue comes, however, from public funds in the form of fees payable in respect of students awarded scholarship, free places or grant places on the basis of performance in common entrance examinations which are held annually, and also for pupils from Junior Secondary Schools who graduate at age 15 and pass a test as to their suitability for further secondary education of the academic type. The fees which are payable from public funds are related to the per capita cost of teachers' salaries, a per capita grant towards the cost of general administration and maintenance and per capita grants for class materials. Other special grants are also made from public funds to assist the schools in financing their operations."* ***(Source: GOJ, Estimates of Expenditure 1970)***

Teacher Training

> *Existing policy provides for free tuition for all students attending any teacher training college. Those students who live in accommodation provided at the colleges or in hostels operated by the colleges also receive free board and lodging. Other students who live in private homes are paid an allowance at the rate of $10 a week towards their living expenses."* ***(Estimates of Expenditure 1970, pg. 528)***

APPENDIX IV
FINANCING THE UWI – MINISTRY PAPER NO. 351/01

Presented by Hon. Donald B. Sangster, Deputy Prime Minister and Minister of Finance, Jamaica
3rd September 1963

UNIVERSITY OF THE WEST INDIES

On the 13th November, 1962, I laid on the Table of the House of Ministry Paper No. 56 along with a Report on the Common Services Conference held in Trinidad from 10th to 18th July, 1962, and indicated the following decisions taken by the conference about the University of the West Indies:-

(i) The Governments of Jamaica, Trinidad and Tobago, the Windward and Leeward Islands, British Honduras and the British Virgin Islands agreed to continue support of the University on a regional basis for at least three triennia – i.e. from 1st August 1963 to 31st July 1972. For the first triennium, these territories would contribute to the recurrent cost of the University net of all other receipts; British Honduras and the British Virgin Islands would contribute towards this net cost in the same proportions as they are contributing now (i.e. 2.2% and 0.19% respectively) and the former Federated territories would meet the remainder – the contributions from these territories to be paid in the same proportion as that used for the mandatory levy;

(ii) the present arrangement under which a Triennial Advisory Committee of Government representatives deals with the University budget, will cease. In future, the review of the University budget should be undertaken in two stages – before a Technical Committee of Civil Servants nominated by the Governments and then before a Policy Committee of Ministers to whom Governments should delegate the right to decide how much money the University is to receive, and to make final commitments. The name of the Ministerial Committee should be the "University Grants Committee";

(iii) proposal relating to the future size of the University would be considered in the normal way by the University Grants Committee whose first meeting was expected to take place in November, 1962.

2. I now wish to report to the House on matters dealt with by the University Grants Committee as well as other important decisions taken by the Council of the University since November last year, all of which are of the greatest concern to us in Jamaica.

FINANCING OF THE UNIVERSITY

3. Prior to the dissolution of the Federation there were firm arrangements for financing an agreed budget of the University for a three year period which ended on the 31st July, 1963. Members of the House will know that funds were contributed to the University by the participating Governments by way of the mandatory levy which was paid to the Federal Government. British Honduras, British Guiana and the Virgin Islands made separate payments to the Federal Government for payment to the University. In addition to these payments it will be recalled that Jamaica had agreed to pay £150,000 for each of the three years ending 31st July, 1963, to meet an increase in the University's recurrent expenditure over and above the amount to which the participating Governments had originally been committed. Trinidad had also agreed to pay £138,889 and Barbados £100,000.

4. There is also the University Hospital which must be considered along with the University when discussing the financial arrangements. The present arrangement for financing this Institution is that Jamaica pays 68% of the net recurrent costs while the participating Governments including Jamaica contribute the remaining 32% in the same proportion as that used for the mandatory levy. The future financing of the Hospital is for consideration of the University Grants Committee.

MEETING OF THE UNIVERSITY GRANTS COMMITTEE

5. The University Grants Committee composed of Ministerial representatives of West Indian Governments which maintain the University met in January and February last to decide what amount would be contributed by the territories for the three year period 1st August, 1963, to 31st July, 1966. The Estimates which were put before the Committee had been previously examined and reported on by a Technical Committee of Civil Servants. The meeting met against the background of firm decisions already reached at the Common Services Conference; the important points that emerged may be summarised as follows:-

(i) The University should receive from the West Indies Territorial Governments a block grant of £3.85 million towards recurrent expenditure and £200,000 should be provided for capital expenditure in order to maintain existing activities.

(ii) The Government of British Guiana through its representative at the Conference, agreed to pay £303,000 as the cost of teaching British Guianese students for the next three years, and £40,000 for the succeeding two years, when they will no longer be contributing to the cost of maintaining the University. These figures were arrived at on the basis of a charge of £1,000 per student per annum at which time the present students from British Guiana will have all left U.W.I.

(iii) British Honduras and the Virgin Islands would not contribute any more than at present.

(iv) The Governments of Barbados, Trinidad and Tobago and Jamaica would be prepared to contribute, in the agreed proportions of the Federal mandatory levy, to the recurrent cost of the Liberal Arts Colleges and evening studies

at Mona to be established in the respective territories limited to £300,000 in the last year of the triennium.

(v) The sum of £110,000 for capital needs would be paid to the University over the period of the triennium in carrying out the scheme for medical students to do part of their training at hospitals in Trinidad and Tobago and Barbados in order to increase the output of doctors from 50 a year to 80 or 90 a year.

(vi) All representatives of the territories except the Governments of Jamaica, Trinidad and Barbados, declined to commit their Governments to pay the agreed proportionate share of the increased costs of the University of the West Indies, mainly on the ground of the financial stringency being experienced by the respective Governments.

(vii) The United Kingdom Government is prepared in principle to assist in financing University expenditure during the next three years by -

(a) providing £52,000 per annum towards the recurrent expenditure of the Faculty of Agriculture;

(b) providing up to 20% of approved schemes for capital expenditure if Jamaica and Trinidad together put up the balance of 80% shared as to 42% for Jamaica and 38% for Trinidad; the cost of schemes not to exceed £350,000;

(c) providing a grant of up to £400,000 for the establishment of a Liberal Arts College in Barbados;

(d) providing £343,550 towards the expenses of the Regional Research Centre;

(e) providing £23,746 towards the expenses of the Seismic Research Unit;

(f) providing £62,412 towards the expenses of the Trinidad Regional Virus Laboratory.

In addition, the United Kingdom Government is prepared to consider further assistance to the grant-aided territories to meet their share of the increased recurrent costs of the University.

(viii) Special provision had to be made for future students from British Guiana as follows:

From October 1963:

(1) The number of undergraduate students admitted in any year from any country not supporting the University's budget should not exceed one per cent of that years entry of undergraduate students. There should be no restriction

of postgraduate students with first degrees from Universities approved by the University of the West Indies.

(2) That the Examination and Tuition fees payable by such a student, excepting a student from British Guiana, for any Degree, Diploma or Certificate course, undergraduate or postgraduate, should be £100 a year, except for:-

a. Engineering, undergraduate £250. 0 .0.

b. Agriculture, postgraduate students sponsored by the Governments of the United Kingdom and the Commonwealth Afro-Asian countries who should pay the same fees as West Indian students.

c. Medicine, undergraduate £350. 0. 0.

(3) That examination and tuition fees payable by students from British Guiana for any Degree, Diploma or Certificate course, undergraduate or postgraduate, should be four times the fee paid by a student from any country supporting the University's budget except for:

a. Engineering, undergraduate £250. 0. 0.
b. Medicine, undergraduate £350. 0. 0.

(4) That for this purpose students from countries supporting the University's budget would include:

a. nationals of these countries;

b. students whose parents reside in these countries;

c. students who have resided in these countries for two years before applying to the University;

d. students who are, and continue to be in full-time employment in these countries;

e. nationals of the United Kingdom, of the United States of America, and of Canada.

The Vice-Chancellor reported to the Committee that he had written to the Department of Technical Coop oration making a special case for the British Government to increase the grant-in-aid to the Windward and Leeward Islands Governments to enable them to meet the additional University subvention during the next triennium.

He proposed that the Governments of Barbados, Jamaica and Trinidad and Tobago should agree to pay their share of the subvention to the University, based on the mandatory levy and that it be left to the University to negotiate with the British Government and the

Windward and Leeward Islands for their shares, and if there were a shortfall during this triennium the University would meet it as best it could. The proposal was agreed to by the Ministers.

Contributions

6. It was agreed that the grants to be made to the University for the three year period 1963-1966 should be on the following basis:-

(a)	**Recurrent Expenditure**	
	Existing Services	£3,850,000
	Liberal Arts	824,700
(b)	**Regional Schemes – Capital & Recurrent**	
	Trinidad Regional Virus Laboratory	113,475
	Seismic Research	97,690
	Regional Research Centre	474,300
(c)	**Capital Expenditure**	
	i. Main Budget	200,000
	ii. Teaching in Eastern Caribbean Hospitals	110,000
	Total	£5,670,165

On the basis agreed at the Common Services Conference the contributions payable towards recurrent expenditure £4,674,700 (£3,850,000 & £824,700) would be as follows –

Block grant		£4,674,700
Less amounts payable by British Guiana (excluding Hospital contribution £76,905)	£226,095	
British Honduras	51,588	
British Virgin Islands	5,898	283,581
Net Total:		£4,391,119
Annual average contribution:		£1,463,706

Distribution

COUNTRY	PERCENT	AMOUNT
Antigua	1.3374	£19,575
Barbados	8.5562	125,238
Dominica	1.6250	23,785
Grenada	1.6969	24,838
Jamaica	43.1119	631,031
Montserrat	0.2732	3,999
St. Kitts	1.7256	25,258
St. Lucia	1.7400	25,468
St. Vincent	1.3086	19,154
Trinidad & Tobago	38.6252	565,360
		£1,463,706

Jamaica's contribution 1963/64

7. Jamaica's contribution to all the services of the University for 1963/64 may be summarised as follows:-

(a)	Recurrent expenditure 43.1119% of £1,463,706	£631,031
(b)	Regional Schemes	
(i)	Trinidad Regional Virus Laboratory	2,210
(ii)	Seismic Research	8,549
(iii)	Regional Research Centre	17,400
(c)	Capital Expenditure	
(i)	Main Budget 42% of £66,667	28,000
(ii)	Teaching in Eastern Caribbean Hospitals 42% of £29,334	15,400
(iii)	Evening Studies at Mona	152,300
	Total	£854,890

8. Jamaica's annual contribution was £410,195 including the special contribution mentioned before; on the basis set out above the annual contribution of this government under the new arrangements would be increased by £292,395 i.e. £854,890 less non-recurrent capital evening studies of £152,300 = £702,590.

Permanent University Grants Committee

9. Having settled the amounts that should be granted to the University there remained to be decided what permanent body should be established in order to provide a liaison between the University and the contributing territories and in order to ensure the smooth flow of contributions. The questions were raised whether the University Grants Committee (U.G.C.) should be a permanent body, meeting more frequently than once every three years and should have more to do with the University than at present; and whether the method of financing the University should be reconsidered by the U.G.C. in relation to the position of the smaller territories in the face of needs for increasing contributions.

10. It was decided to establish the U.G.C. on a permanent basis with a Secretariat established in Jamaica. I agreed to provide the Secretariat and the Secretary as I do not consider that the duties will involve the services of a full time officer. The arrangements for the permanent U.G.C. are set out below:-

Function and Terms of Reference

(i) The University Grants Committee should –

(b) examine the extent to which the University is meeting the national needs, both in the education of students and in research of benefit to the region;

(c) examine University proposals for expenditure in the light of these national needs, to recommend to Governments the provision of the necessary finance and to satisfy itself that the money voted is properly managed;

(d) do both these things without interfering with the essential freedom of the University, thereby leaving the conduct of University business to the organ of academic self-administrations.

(ii) The terms of reference of the University Grants Committee should be:

"To enquire into the financial needs of University education; to advise the contributing Governments of the grant to be made towards meeting them and to assist in consultation with the University and other bodies concerned, in the preparation and execution of such plans for the development of the University as may from time to time be required in order to ensure that they are fully adequate to national needs."

Composition and Secretariat

(iii)(a) The membership of the committee should be as follows:

(a) Two members, the Ministers of Finance and the Ministers of Education, or their nominees as necessary, from –

Barbados
Jamaica
Trinidad & Tobago

(b) One member, a Minister of Finance or a Minister of Education, or his nominee, as necessary from –

The Windward Islands
The Leeward Islands

(c) One member, the Minister of Finance or the Minister of Education, or his nominee, as necessary from –

British Honduras

This proposal should be reviewed in the context of any new Federation which may be formed in the Eastern Caribbean Islands.

(iii)(b) The Committee should have as advisors, not more than three persons eminent in University administration not connected with the University of the West Indies, selected by the University Grants Committee, to advise on the triennial allocation.

(iii)(c) The Committee should have powers to co-opt and should normally work through specialist sub-committees.

(iii)(d) The Chairmanship of the Committee should rotate amongst the Ministers of Finance of Barbados, Jamaica and Trinidad & Tobago on a triennial basis.

(iii)(e) The Committee should rotate its meetings among the various campuses of the University.

(iii)(f) The Secretariat should be provided by the Ministry of Finance in Jamaica, and the Secretariat should be a senior member of that Ministry, nominated by the Minister.

(iii)(e) Representatives from any four Governments shall constitute a quorum.

General

(iv) The Committee should work through visitations and seek to be in close and friendly touch on the one hand with the University, and on the other hand with the contributing Governments. It should endeavour to study the needs of the contributing Governments adequately and to keep in touch with University developments overseas.

(v) The Committee would be geared to deal with any situation arising from a shortfall in Government's contributions to the University.

(vi) The Committee's approval shall be sought by the University for acceptance of any outside grants which would create a continuing commitment.

(vii) One of the first jobs of the Committee should be to reconsider the method of financing the University in relation to the position of the smaller territories in the face of needs for increasing contributions.

(viii) (a) Any costs of running the Committee should be regarded as part of the costs of the University and shared in the same manner as University costs.

(b) The costs of their representatives attending meetings of the University Grants Committee should be to the charge of the individual Governments concerned.

(ix) A specialist sub-committee of the University Grants Committee (sec. (iii) (c) above) working in conjunction with the Ministry of Finance in Jamaica, should examine the financing of the Hospital.

CHANGING ROLE OF THE UNIVERSITY IN RELATION TO THE WEST INDIAN COMMUNITY

11. The decisions of financial matters having been made by the U.G.C. the Council of the University concerned itself with the role that the University should play in relation to the West Indian community that it was designed to serve. There was expressed a general concern that in the developments in general degree

studies for evening teaching at Mona and day and evening teaching at St. Augustine and in Barbados the programme should not be arranged on the lines of the present U.W.I. general degree. These and other matters which will determine how far the University will make an impact on the community are set out in the following paragraphs.

Liberal Arts and Evening Studies

12. It was agreed that the most efficient way in which Liberal Arts facilities may be provided at the main centres of population in the area served by the University was by the provision of Day and Evening Classes at St. Augustine in Trinidad, day classes in a college to be created in Barbados and by the provision of Evening Classes at Mona. While the recurrent cost of those studies is included in the recurrent budget of the University, the capital costs are to be met by the Governments concerned except in the case of Barbados which will be met from a special grant from Her Majesty's Government. The general degree courses in the Liberal Arts colleges and in the Evening Studies at Mona would be fairly similar and the ordinary general degree for other students at U.W.I. would be revised accordingly.

13. Evening Studies at Mona**:** In the case of Mona the University had submitted estimates in the sum of £171,000 to provide the necessary facilities. These estimates have been closely scrutinized to ensure that there is no duplication of the existing facilities. As a result it has been agreed that subject to a further review, expenditure on such facilities should be confined to a sum not exceeding £152,300.

14. Three Advisory Committees consisting of members of the staff of the University and representatives from other interested bodies have been set up by the University to assist the University in effectively planning programmes for these new developments which are scheduled to begin in October, 1963.

Caribbean Studies

15. It was considered that in planning the programmes for October 1963 a high priority should be given to compulsory courses for all students in the new degree which would provide general surveys in the social sciences, humanities and natural sciences and with specific instructions in Caribbean affairs. This was considered essential if the countries concerned were to obtain the cadre of graduates required for general service by any country taking its full place in the international community. It was agreed to be put to the Senate:

(i) that there should be offered in the three following subjects courses which must be taken in Year 0 (preliminary) and Year 1 of the degree course:-

(a) English
(b) The development of civilization (including a survey of the humanities and the development of science & technology)
(c) Historical development of the Caribbean;

(ii) that the Caribbean studies should be compulsory for all students in years II and III except those students offering two or more science subjects.

Future of Extra Mural Work

16. Council accepted the following basic principles in respect of Extra-Mural Work:-

(i) With the establishment of Colleges in Barbados and in Trinidad and Tobago the expenditure on Extra-Mural Work in the larger territories should be reduced (due regard being had, however, to the size of Jamaica).

(ii) The emphasis on Extra-Mural work should be concentrated on the smaller islands and on British Honduras.

(iii) The programme of Extra-Mural work in the Leeward and Windward Islands and in British Honduras should follow, as far as possible the curricula for general studies in the three constituent Colleges with special emphasis on the compulsory courses in English Civilization and Caribbean Studies.

(iv) The Extra-Mural work in the Leewards and Windwards and in British Honduras should pay special attention to the Trade Unions, Social Welfare and the Civil Servant.

(v) Extra-Mural activities in those smaller territories should, to the greatest extent possible, emphasize extension work by the professional schools of the University.

(vi) The Extra-Mural work in the smaller territories should also emphasize non-degree courses and on the basis of the success achieved in Jamaica and British Honduras with regard to lectures should give special attention to courses in Citizenship, Independence, International Affairs, Political Education and World Economic Problems and Developments which are slowly strangling the economy of the smaller territories.

(vii) The Advisory Committee on Evening Studies at Mona and for the Liberal Arts Colleges should consider the organisation of non-degree courses based on the curriculum of the Colleges.

It was agreed that a conference should be held in Antigua (subject to agreement by that Government) about September 1963 to consider and report on :-

(i) the detailed organisation of future University extension work in the smaller territories; and

(ii) the staff requirements (including itinerant staff) for that work.

Besides officials of the University a representative of each territory concerned would attend at their country's expense. The Government of Jamaica would be requested to release the High Commissioner for Jamaica in Port of Spain to attend the Conference.

It was further agreed:-

To request Senate to examine in detail and on a long-term basis for report to Council two questions raised by the Director of Extra-Mural Studies:-

(i) The possibility of introducing either external degrees or a system of credits for courses based on the curriculum of the Liberal Arts Colleges;
(ii) The establishment of "Junior Colleges" in the smaller territories.

Training of Lawyers

17. Over the past years the question of the establishment of a Department or Faculty of Law has from time to time been raised with the University. A Faculty of Law was costed by the University amongst the possible new projects for the triennium 1963/66 which were put before the University Grants Committee in January of this year, and for which the contributing governments then felt unable to provide funds. The University in any case then felt unable to recommend a high priority for this Faculty, in view of the uncertainties regarding future needs for, and practice by, the students who would graduate from a Law Faculty.

18. The Council considered that the University must continue actively to play its proper part in arriving at a satisfactory decision on this matter. It therefore agreed:-

(a) To establish a Committee on Legal Training to consider and make recommendations to Council on the assistance which the U.W.I. as part of its service to the West Indian Community and in light of its responsibility for satisfying the intellectual and professional needs of the West Indies, should provide for training in the West Indies of Legal practitioners with a view to ensuring their admission to practise and the right of audience before the courts of the West Indies.

(b) To request the Governments to meet the expenses of this Committee.

Conference on West Indian Archives

19. The attention of Council was drawn to the importance of making available in the West Indies information from the West Indian Archives abroad. Accordingly Council RESOLVED THAT:-

(a) Council agrees to invite the Government of Jamaica, in the light of the international reputation of the Institute of Jamaica, to convene not later than 1965 in collaboration with the U.W.I. a conference of West Indian Governments and scholars to discuss the possibility of making the extensive archives of the West Indian territories and famous books on the West Indies available to West Indians in the West Indies and to be host to the conference.

(b) Council directs that the assistance of UNESCO and appropriate philanthropic foundations be sought for this project.

(c) Council agrees that invitations to conference should be issued to the Governments of the U.K., U.S.A., France and Holland.

(d) Council appoints the following committee to make preparations for the conference, and to report back to the Council in February 1964:

The Pro-Chancellor
The Vice-Chancellor
The Members of Council for:
Jamaica
Barbados
Trinidad & Tobago
The Windward Islands
The Leeward Islands
British Honduras
Mr. Archbald MacLeish

(e) Council appoints a Working Party to report to the main Committee, on which the following are to be invited to serve:

The Librarian of U.W.I.
The Professor of History (as Chairman of the Archives Committee of U.W.I.)
A nominee from the Institute of Jamaica
The Archivist of Jamaica

Revision of Charter, Statutes and Ordinances

20. It was early realised that proposals for changes in the Charter Statutes and Ordinances of the University had to be considered in the light of developments in the area which had occurred since the Council in June 1961 had agreed to petition Her Majesty the Queen for the new Charter which had been granted on April 2, 1962. This matter was deferred for further consideration.

Other Matters

21. Other matters on which the Council will make further recommendations are:-

(a) Survey of Manpower Needs;
(b) Organization (including decentralisation) of University Administration.

22. A Resolution seeking the endorsement of the House for the proposals contained herein will be moved by me in due course.

D.B. Sangster
Deputy Prime Minister & Minister
of Finance

3rd September, 1963

M.P. No. 351/01

APPENDIX V
EXCERPT FROM COMMONWEALTH YEAR BOOK 1965

UNIVERSITY	COUNTRY	YR. ESTB.	STUDENT NUMBERS	STUDENT/STAFF	COST PER STUDENT	STAFF/ STUDENT RELATIVE TO UWI	COST PER STUDENT RELATIVE TO UWI
ADELAIDE	AUSTRALIA	1874	6,400	14.00	£415	8.00	605
QUEENSLAND	AUSTRALIA	1909	7,712	9.90	£400	3.90	620
TASMANIA	AUSTRALIA	1890	1,364	9.60	£620	3.60	400
W. AUSTRALIA	AUSTRALIA	1911	3,640	12.00	£550	6.00	470
AUSTRALIA OVERALL	AUSTRALIA				£425	(6.00)	595
ACADIA	CANADA	1838	1,355	14.70	£450	8.70	570
U.B.C.	CANADA	1908	14,500	10.90	£520	4.90	500
DALHOUSIE	CANADA	1816	2,850	8.70	£570	2.70	450
MCMASTER	CANADA	1887	4,355	17.50	£500	11.50	520
QUEEN'S	CANADA	1841	3,776	7.40	£580	1.40	440
GUELPH	CANADA	1964	1,776	5.80	£1,570	(0.20)	(550)
OTAGO	NEW ZEALAND	1869	3,042	10.90	£565	4.90	455
AUCKLAND	NEW ZEALAND	1882	4,582	14.70	£267	8.70	753
MASSY	NEW ZEALAND	1964	1,080	20.80	£600	14.80	420
HULL	U.K.	1927	2,378	8.70	£469	2.70	551
LEICESTER	U.K.	1918	1,949	8.50	£480	2.50	540
IMPERIAL COLLEGE	U.K.	1907	3,025	6.60	£1,140	0.60	(120)
KING'S COLLEGE	U.K.	1829	2,238	8.50	£550	2.50	470
Q. MARY'S COLLEGE	U.K.	1887	1,418	8.10	£640	2.10	380
WYE COLLEGE	U.K.	1893	241	8.10	£1,360	2.10	(340)
LONDON OVERALL	U.K.			5.10	£910	(0.90)	110
U.K. OVERALL	U.K.				£670	(6.00)	350
HONG KONG	HONG KONG	1911	1,998	8.70	£600	2.70	420
NAIROBI	AFRICA	1961	568	4.60	£1,160	(1.40)	(140)
MAKERERE	AFRICA	1949	862	5.40	£1,050	(0.60)	(30)
GHANA	AFRICA	1949	1,397	5.70	£1,090	(0.30)	(70)
KWAME NKRUMAH	AFRICA	1951	808	5.50	£1,860	(0.50)	(840)
IBADAN	AFRICA	1948	2,014	6.20	£1,080	0.20	(60)
IFE	AFRICA	1961	465	5.90	£1,170	(0.10)	(150)
FOURAH	AFRICA	1960	518	6.00	£1,090	0.00	(70)
WA AFRICAN UNIVERSITIES	AFRICA			5.65	£1,186	(0.35)	(166)
UWI	WEST INDIES	1948	1,854	6.00	£1,020	0.00	0

APPENDIX VI

EXCERPT OF FROM BUDGET SPEECH

MAY 2□1973

Prime Minister Michael Manley's announcement OF Free Education to Parliament

We believe that education is not only the right of the people, but we believe this is the only way by which a people can lift themselves out of their suffering and begin to realize their ambition. Therefore, we do not believe that children who have had the skill to fight their way through the system should have to pay to supply us with the skills that we need. I think there is another way they can serve and the principle of the system should be clear. Therefore, I am very pleased to announce that the Government of Jamaica is announcing a scheme for free secondary education which will commence in September of this year.

I am announcing further, Mr. Speaker, that this year September, all school fees in secondary schools in Jamaica will be abolished and supplied by the Government and next year September, all other fees, such as games fees and other kinds of fees will be abolished in Jamaica.

I have given the smallest part of the package first. Now, we are talking about education, we are talking about galvanising Jamaica. We are going further and then you will see how it all fits together to indicate the watershed in our history.

We are going further, Sir, and for those children that can fight through the Primary system, fight through the Secondary system, fight to 'O' Levels, fight all the examinations to reach University at the end to get the final touches of skills that we need, we are also abolishing the fees of Jamaican children at the UWI.

(Hearn, ed. 1976:92)

APPENDIX VII
SLB LOANS 1970 - 1994

	Loan Approvals			Loan Disbursements [a/]		Average Loan Size of Approved Loans	
Year	Number of Loans	(current J$'000)	Constant [b/] 1994 J$'000)	Constant 1994 J$'000	As% of Approved Loans	Current (J$)'000	(constant 1994 J$'000
1970/71	467	744	70,188	-	-	1,594	150,195
1971/72	1,006	1,380	123,109	-	-	1,372	122,375
1972/73	1,002	1,491	126,204	-	-	1,488	125,952
1973/74	1,121	1,609	116,056	-	-	1,435	103,592
1974/75	1,129	1,055	59,950	-	-	934	53,100
1975/76	1,691	2,791	134,467	-	-	1,651	79,625
1976/77	1,838	3,758	165,865	-	-	2,045	90,242
1977/78	1,943	2,654	104,855	-	-	1,366	53,100
1978/79	2,346	5,267	154,414	-	-	2,254	65,820
1979/80	1,796	2,215	50,347	-	-	1,233	28,033
1980/81	2,192	3,070	54,671	51,726	94.6	1,401	24,941
1981/82	2,319	3,663	57,260	54,864	95.8	1,566	24,692
1982/83	2,576	4,466	65,599	60,648	92.5	1,734	25,465
1983/84	2,644	4,815	62,242	58,397	93.8	1,821	23,541
1984/85	2,677	5,100	49,716	47,066	94.7	1,905	18,571
1985/86	2,160	5,080	39,650	35,185	88.7	2,352	18,357
1986/87	2,394	7,747	54,271	51,633	95.2	3,236	22,670
1987/88	2,481	9,199	61,227	55,944	91.4	3,708	24,679
1988/89	2,582	10,856	66,437	57,451	86.5	4,294	26,281
1989/90	2,315	10,107	53,858	56,620	105.7	4,366	23,147
1990/91	2,593	13,533	57,939	50,390	87.0	5,219	22,344
1991/92	3,121	17,629	46,107	38,193	82.9	5,648	14,773
1992/93	3,179	22,703	35,682	29,219	81.9	7,142	11,224
1993/94	3,162	28,104	35,722	33,402	93.5	8,888	11,297
1994/95 to Oct. 1994	2,298	22,306	22,306	-	-	9,707	9,707

Sources (World Bank, Report No. 15594-JM, July 1, 1996)

APPENDIX VIII
BOARDING GRANT 1973 - 1986

Financial Year	UWI	CAST	Total No. of Grants Disbursed	Value $
1973/74	322	114	436	unavailable
1974/75	511	872	1,383	908,755.35
1975/76	1,075	1,467	2,542	1,575,113.00
1976/77	1,908	1,292	3,200	2,452,658.15
1977/78	2,069	1,320	3,389	2,528,509.31
1978/79	2,095	1,257	3,352	2,555,911.99
1979/80	2,126	1,253	3,379	2,626,056.86
1980/81	1,973	1,229	3,202	2,501,107.38
1981/82	2,146	1,187	3,333	2,528,782.52
1982/83	2,168	1,366	3,534	2,584,529.65
1983/84	2,278	1,484	3,762	2,799,183.86
1984/85	2,252	1,626	3,878	3,247,485.81
1985/86	2,028	1,586	3,614	3,118,260.31
				29,426,354.19

(Source Sherlock 1986:63)

APPENDIX IX

UWI COST ALLOCATION PROPOSAL PRE 1972

Schemes Proposed	Description	Reactions
A	Each participating government bearing its share based on National Income per capita	The methods of computing National Income figures varied according to economists hence disputes would surround final figures
B	Each participating government bearing its share based on "gross domestic product" statistics.	Not a good measure as GDP figures are not necessarily linked with either resources or welfare of a country.
C	Each participating government bearing its share based on "population" statistics.	Simple but challenged on the grounds of inequity in that the population basis presumes that there will be relative equality of public opportunity to benefit from university training. Distribution of students was not on population hence the benefit was not proportionate to population. This basis also did not equitably reflect the ability to pay.
D	Each participating government bearing its share based on "true revenue" figures.	As a single index it does not necessarily preserve real equity since levels both of direct and indirect taxation and fiscal structure of each country varied widely in the Caribbean
E	Each participating government bearing its share based on "a mean of population and true revenue figures".	Same as C and D
F	Each participating government bearing its share based on full economic cost per student.	Gives an equitable basis but would be difficult to operate unless a quota system to each government was introduced
G	Continuation of the levy contribution ratios with the proviso that a discount be arrived at for credit to those territories where no campus were sited	Simple to operate and had the advantage of lightening the financial burden on the smaller territories.

Source: UWI Archives

APPENDIX X
PROJECTED EFFECTS OF THE UWI PROPOSAL

Territories	Mandatory Levy Formula (1)	Real Contribution Basis (2)	National Income Per Capita (3)	G.D.P. (4)	Revenue (5)	Population (6)	Mean REV-POP.	Economic Cost (7)	Discount Basis
	%	%	%	%	%	%	%	%	%
Antigua	1.3374%	1.2640%	5.05%	0.77%	1.88%	1.62%	1.75%	1.28%	1.1003%
Dominica	1.6250%	1.5358%	4.23%	0.73%	1.02%	1.77%	1.39%	1.22%	1.3369%
Grenada	1.6969%	1.6037%	3.62%	0.93%	1.37%	2.52%	1.94%	1.95%	1.3960%
Montserrat	0.2732%	0.2582%	3.58%	1.33%	0.42%	0.38%	0.40%	0.31%	0.2248%
St. Kitts-Nevis-Anguilla	1.7256%	1.6309%	3.94%	0.64%	1.13%	1.57%	1.35%	1.23%	1.4196%
St. Lucia	1.7400%	1.6445%	3.39%	0.95%	1.39%	2.82%	2.11%	1.38%	1.4315%
St. Vincent	1.3086%	1.2367%	3.18%	0.75%	1.06%	2.34%	1.70%	1.50%	1.0765%
	9.7067%	9.1738%	26.99%	6.10%	8.27%	13.02%	10.64%	8.87%	7.9856%
Bahamas	-2.8800%	2.8800%	29.38%	12.11%	11.69%	3.59%	7.64%	2.16%	2.5069%
Br. Honduras	-2.2000%	2.2000%	6.01%	1.71%	2.00%	2.79%	2.40%	1.12%	1.9149%
Cayman Islands	-0.2200%	0.2200%	5.67%	0.13%	0.34%	0.24%	0.29%	0.07%	0.1915%
Br. Virgin Islands	-0.1900%	0.1900%	6.30%	0.13%	0.32%	0.23%	0.27%	0.29%	0.1654%
Barbados	8.5562%	8.0865%	7.05%	4.50%	6.13%	6.46%	6.30%	6.25%	8.2665%
Trinidad & Tobago	38.6252%	36.5047%	10.22%	32.99%	30.60%	25.94%	28.27%	33.08%	37.3174%
Jamaica	43.1119%	40.7450%	8.38%	42.33%	40.65%	47.73%	44.19%	48.16%	41.6518%
	100%	100%	100.%	100%	100%	100%	100%	100%	100%

Notes

1 The percentages shown in brackets (totalling 5.49%) represent the shares borne by those territories who were not a part of the Federation. The money figures based on these percentages were deducted from the agreed total subvention, the balance being met on the basis of the mandatory Levy. In short, only 94.51% of the subvention is met on the Mandatory Levy basis.

2 The shares referred to in note 1 are distributed among the other participating territories in the ratio in which they contributed

3 Based on available statistics.

4 Gross Domestic Product at Factor Cost 1965

5 Revenue figures for 1967

6 Population figures based on 1965 Census.

7 Based on 1968/69 student numbers and per capita costs.

Source TAC Report April 15, 1969

APPENDIX XI
THE UWI EXPENSE SHARING MODELS

Mathematical interpretation of the models adopted since 1963

1963 – 1973 – RAM during the Mixed Period

$$R_j = Rl_j \qquad (4.1)$$

Where, R_j = Portion of recurrent expenditure provided by Jamaica

R = Recurrent Expenditure of the University

l_j = Levy rate for Jamaica.

This resulted in the 1962/63 allocation of the recurrent expenditure as follows:

Country	*Percent*	*Amount*
Antigua	*1.3374%*	*£19,575*
Barbados	*8.5562%*	*£125,238*
Dominica	*1.6250%*	*£23,785*
Grenada	*1.6969%*	*£24,838*
Jamaica	*43.1119%*	*£631,031*
Montserrat	*0.2732%*	*£3,999*
St. Kitts	*1.7256%*	*£25,258*
St. Lucia	*1.7400%*	*£25,468*
St. Vincent	*1.3086%*	*£19,154*
Trinidad & Tobago	*38.6252%*	*£565,360*
		£1,463,706

There was no set formula for sharing the costs for specific projects, capital expenditure and other non-recurrent items. The share of the cost of each project was specifically negotiated. The mathematical interpretation for Jamaica's share is expressed in equation 3.2.

$$N_j = \sum(Pr_j) \qquad 4.2$$

Where N_j = Amount for Non-Recurrent expenditure provided by Jamaica

P = Project cost

r_j = Rate at Jamaica decided to share cost

The mathematical interpretation of the total allocation to Jamaica of the cost of the University is derived in equation 3.3.

$$A_j = R_j + N_j \qquad 4.3$$

or

$$\mathbf{A_j} = \mathbf{R}\boldsymbol{l}_\mathbf{j} + \sum(\mathbf{P}\boldsymbol{r}_\mathbf{j})$$

Where $\mathbf{A_j}$ = Total Allocation to Jamaica

For 1963/64 the result as outlined by the Minister of Finance, was

a)	*Recurrent expenditure 43.1119% of £1,463,706*	*631,031*
b)	*Regional Schemes*	
i.	*Trinidad Regional Virus Laboratory*	*2,210*
ii.	*Seismic Research*	*8,549*
iii.	*Regional Research Centre*	*17,400*
c)	*Capital Expenditure*	
i.	*Main budget 42% of £66,667*	*28,000*
ii.	*Teaching in Eastern Caribbean Hospitals 42% of £29,334*	*15,400*
iii.	*Evening Studies at Mona*	*152,300*
	Total:	*£854,890*

Item a) is represented by $\mathbf{R_j}$ or $\mathbf{R}\boldsymbol{l}_\mathbf{j}$ and items b) and c) and represented by $\mathbf{N_j}$ or $\sum(\mathbf{P}\boldsymbol{r}_\mathbf{j})$.

1973 – 1984 – RAM During the Free Education Era

For the purpose of illustration of the changes, the triennium 1975/78 is being used. A letter to the Permanent Secretary of the Ministry of Education on 27th August 1975 pointed out that the grants approved by the UGC were divided in two categories as follows:

1. Recurrent Expenditure

	Triennium	Annual
a) Continuation and consolidation of existing activities	55,266,108	18,422,036
b) Regrading of Non-academic staff – Mona	7,628,770	2,542,924
c) Regrading of Non-academic staff – St. Augustine	3,565,798	1,188,599
d) Expansion & New Developments	2,585,136	955,045
e) Faculty of Law Capital	96,250	96,250
	69,142,062	23,204,854

2. Other Grants

a) Seismic Research – including capital	634,475	237,820
b) Advanced Nursing	201,717	67,239
c) Subsidy for Accommodation 1975/76	343,810	343,810
d) University Hospital	39,184,189	13,061,396
	40,364,191	13,710,265

The first task was to determine the economic cost and Items a), b) and c) were those used in such calculation. The Development and Planning Unit document dated August 7, 1981, stated that

> *the economic cost is essentially the average cost to the University through its recurrent budget for maintaining teaching Departments, Institutes, Libraries, Extra Mural and Administration for the number of students registered…In addition since*

the number of students per teacher (the student/staff ratio) and the level of ancillary services vary from one activities which are regarded as related to the whole operation or cannot justifiably be allocated to a specific teaching commitment are grouped together as an administration cost to be applied to the total student population. We thus arrive at a unit faculty cost and a unit administrative cost which together make up the economic cost for the appropriate faculty.

The examination of the billing records also revealed that the economic cost was determined in two stages. The first stage was that of calculating the PCC for the faculty on the individual campus. Such calculation can be represented by the mathematical formula as follows:

$$\mathbf{PCC_{fm} = (SC/E) + (FC_{fm}/E_{fm})} \qquad \mathbf{(4.4)}$$

Where

SC = Total Administrative (Shared) Cost for the University

E = FTE Enrolment for the University

FC_{fm} = Costs directly attributed to the Particular Faculty on a Campus

E_{fm} = FTE Enrolment for the particular Faculty on a Campus

PCC_{fm} = Per Capita Cost for the particular Faculty on a Campus.

The summation of the PCC of the faculty on each campus then becomes the PCC of the faculty as represented by equation 3.5.

$$\mathbf{PCC_f = PCC_{fn} + PCC_{fc} + PCC_{fa}} \qquad \mathbf{(4.5)}$$

Where

PCC_f = Per Capita Cost for the Faculty

PCC_{fn} = Per Capita Cost of the Faculty on the Mona Campus

PCC_{fc} = Per Capita Cost of the Faculty on the Cave Hill Campus

PCC_{fa} = Per Capita Cost of the Faculty on the St. Augustine Campus

It was the PCC of the faculty was used to determine the cost allocation to each government. This caused equation 3.1 to change to 3.6

$$\mathbf{R_j = \sum(PCC_f * E_{fj})} \qquad \mathbf{(4.6)}$$

Where E_{fj} = FTE Enrolment of Jamaican Students per Faculty

When the discount afforded to non-campus countries is taken into account then equation 3.7 is derived.

$$\mathbf{R_j = \sum(PCC_f * E_{fj}) + D} \qquad \mathbf{(4.7)}$$

Table below shows the result of the billing for 1975/76 for the recurrent portion.

Calculation of PCC for 1975/76

	Actual #	E_{fj} FTE	PCC_{fm} J$	PCC_{fa} TT$	PCC_{fc} Bds$	PCC_f J$	R_j J$
Arts & General Studies	897	781.45	1,834.52	1,920.05	738.25	2,908.57	2,272,901.21
Social Sciences	658	566.75	1,834.52	1,920.05	738.25	2,908.57	1,648,431.45
Natural Sciences	924	858.45	2,652.16	2,119.20	1,050.96	3,944.95	3,386,538.91
Education	154	134.00	2,532.40	1,181.74	412.58	3,174.45	425,376.53
Medicine - Pre-Clinical	165	151.00	7,737.23	1,181.74	412.58	8,379.28	1,265,271.54
Medicine - Clinical	119	119.00	3,560.88	1,181.74	412.58	4,202.93	500,148.88
Agriculture	53	53.27	1,224.32	6,923.77	412.58	4,074.84	217,066.98
Engineering	167	170.83	1,224.32	6,261.71	412.58	3,820.21	652,605.85
Law	140	139.50	1,389.76	1,472.36	2,625.06	3,149.26	439,321.97
	3,277	2,974.25					**10 807 663.32**
Discount							232,463.32
Total Recurrent Contribution							**11 040 126.65**

There was no change to the formula for calculating Jamaica's portion of the non-recurrent expenditure as the share was negotiated on a project by project basis. Equation 3.2 therefore remained and the results for 1975/76 is shown in Table below

$$N_j = \sum(Pr_j) \qquad 4.2$$

Jamaica's Share of Non-Recurrent Expenditure for the UWI 1975/76

	Formula	Amount
Capital - Law	Pr_l	37,298
Capital - Expansion	Pr_l	17,899
Hall Subsidy	Pr_h	201,665
Advance Nursing Education	Pr_n	33,876
Study & Travel Grant	Pr_s	156,615
University Hospital	Pr_h	1,695,059
University Hospital Reserve	Pr_h	267,644
Post Medical Studies	Pr_d	120,000
Teaching of the Deaf	Pr_x	10,633
Seismic Research Regrading	Pr_x	3,777
Total Other Costs	$\sum(Pr_j)$	2,544,466

The formula for calculating the allocation of cost to Jamaica therefore changed from 3.3 to equation 3.8.

$$A_j = R_j + N_j \qquad 4.3$$

$$A_j = \{\sum(PCC_f * E_{fj}) + D\} + \sum(Pr_j) \qquad 4.8$$

= **11 040 126.65 + 2 544 466**

= **13 584 593**

1984- 1994 RAM During the Period of the CESS

In October 1977 the Government of Trinidad and Tobago published a White Paper on "National Institute of Higher Education" which included among other things, proposals for restructuring the U.W.I. Consequently the Ministers of Education of the supporting countries requested the UWI to hold discussions with the government of Trinidad and Tobago to reconcile any differences between the proposals from their Inter-Governmental committee report of 1976 and the White Paper. The discussions were finalised on June 22, 1984 when the "UGC received MPV 2/1982 and noted the details of the new financial arrangement which had been accepted by the previous meeting of UGC held on September 21, 1982 to come into effect as from August 1, 1984". This resulted in the restructuring of the university and changes to the resource allocation mechanism and process as hereunder considered.

The activities of the university were separated into four categories, namely

- Campus Activities
- Central University Activities
- Specialised Research and Services at each Campus
- Special Programmes for the Non-Campus Countries

The duties and responsibilities of each area are found in the Minutes of the Ministerial Policy Committee of the UGC, Feb. 13, 1982 and summarised in Appendix XIV. The December 4, 1980 Report defined the responsibilities of each area:

Campus Activities: The change resulted in a devolved management structure and with the exception of Common Services; each of the three campuses was responsible for all the programmes and projects in its territory. The individual campus was expected to plan the development of the facilities sited on its campus as well as the establishment of new facilities. In so doing it was expected to consult with the other Campuses, the Centre and where appropriate, the individual non-Campus member countries. Where there were differences of opinion as to the new direction, it was obligator for the divergent views to be presented to the Campus UGC. The final decision however rest with the Campus and its UGC (Restructuring the UWI, Dec. 4, 1980).

Central University Activities were common services and these were defined as:

a. The granting of degrees, diplomas and certificates
b. The maintenance of common academic standards;
c. The policy with regard to admission requirement;
d. Making appointments above the grade of senior lecturers, Directors/Heads of Institutes, Schools, Departments and analogous units;
e. Advising on promotions to the grade of senior lecturer and above on tenure;
f. Undertaking extra-mural outreach and similar programmes mounted for and undertaken in the NCCs;
g. Planning new, and the development of existing, university programmes.

Specialised research and service units were physically located on a particular Campus but undertook research for and provide services to the region as a whole. They could however have small units in different countries, as did the Tropical Metabolism Research Unit, the Seismic Research Unit and the Institute of Social and Economic Research.

Special Programmes for the Non-Campus Countries: The Centre was also responsible for planning and executing programmes in and for the NCCs. Such could be done with the assistance of the campus authorities and if they could not accede to the request then the reasons should be conveyed to the Campus UGC.

Miller (1987) outlined that the Per Capital Cost was calculated as follows

> *The Faculty's Expenditure for the year at each Campus divided by the total number of students (weighted) in the Faculty at that Campus*
>
> *PLUS*
>
> *Central Expenditure/Common Services of the Campus divided by the number of students (weighted) at the Campus.*
>
> *PLUS*
>
> *Centre Expenditure at all three Campuses divided by the total number of students (weighted) attending the University for the year.*

The RAM policy shift caused an adjustment to equation 3.4 as is represented in equation 3.9.

$$\mathbf{PCC_{fm} = (SC/E) + (FC_{fm}/E_{fm})} \qquad \mathbf{(4.4)}$$

$$\mathbf{PCC_{fm} = (SC/E) + (SC_m/E_m) + (FC_{fm}/E_{fm})} \qquad \mathbf{(4.9)}$$

Where

SC	=	Centre Expenditure or University Shared Costs
SC_m	=	Administrative Cost for the Campus or Campus Shared Costs
FC_{fm}	=	Expenditure of a particular Faculty on a particular Campus
E	=	FTE Enrolment for the entire University
E_m	=	FTE Enrolment of the Campus
E_{fm}	=	FTE Enrolment for the particular Faculty on a particular Campus
PCC_{fm}	=	Per Capita Cost for the particular Faculty on a particular Campus.

The need for equation 3.5 to arrive at a University average for PCC was thereafter unnecessary.

The costs associated with the Specialised Research and Service Units were to "be kept separate from the regular teaching costs on the Campus" (Restructuring the UWI, 1980) and "be funded through schemes approved by the Central UGC" (Minute of MPC Feb. 13, 1982). Special programmes for NCCs was also financed differently and was initially in the following proportion

Non-Campus Countries	10.00%
Trinidad and Tobago	45.00%
Barbados	8.19%
Jamaica	36.81%
	100.00%

The formula for attributing the cost for the resources to be allocated to the University was radically changed as is seen from the mathematical representation of equation 3.10.

$$\mathbf{A_j = \sum(PCC_{fmj} * E_{fmj}) + D_j + \sum (SRC * x_j) + (NPC * y_j)} \qquad \mathbf{(4.10)}$$

Where

D_j	=	Portion of discount being absorb by Campus country
SRC	=	Cost for Specialised Research
NPC	=	Cost of Special Programmes for NCC
x_j	=	SRC rate of absorption for Jamaica
y_j	=	NPC rate of absorption Jamaica

1994 – Cost Sharing

Tuition fee for the UWI student was established as an institutional percentage of the PCC as per Equation 3.13.

$$\mathbf{P_f = X\% * PCC_f} \qquad \mathbf{4.13}$$

Where P_f = Tuition Fee Student per Faculty

X = Institutional percentage

The original intention was that "the fee should be set at a level of 10% of economic cost for the academic year 1992/1993 and 15% of economic cost for the triennium 1993/94 – 1995/96" (Report on Committee on Tuition Fees 1991). The Government of Jamaica had hoped to incrementally increase the percentage contribution to a maximum of 35% by 1999 but in 2005 the maximum contribution for students for that institution was less than 20%.

The third step in the RAM for the UWI was determining the Governments' portion. This was gleaned from recommendation 6 of the Report of the Implementation Committee of the Commission on Governance which stipulated that after the students proportion was determine "Government should fully fund the remaining costs".

APPENDIX XII
UWI ENROLMENT

Growth in On-Campus Student Registration 1948-2002										
YEAR	UNIVERSITY			CAMPUS			YEARS INCREASE			
	Male	Female	Total	C.H.	MO.	St. A.	Univ.	C.H.	MO.	St. A.
1948/49	23	10	**33**				33			
1949/50	54	16	**70**				37			
1950/51	104	37	**141**				71			
1951/52	152	53	**205**				64			
1952/53	175	79	**254**				49			
1953/54	212	90	**302**				48			
1954/55	275	109	**384**				82			
1955/56	299	145	**444**				60			
1956/57	325	169	**494**				50			
1957/58	354	201	**555**				61			
1958/59	391	231	**622**				67			
1959/60	446	249	**695**				73			
1960/61	657	320	**977**	n/a	910	67	282	n/a	215	67
1961/62	852	416	**1268**	n/a	1172	96	291	n/a	262	29
1962/63	954	468	**1422**	n/a	1422	146	154	n/a	250	50
1963/64	1465	722	**2187**	118	1486	583	765	118	64	437
1964/65	1661	862	**2523**	185	1558	780	336	67	72	197
1965/66	1966	1072	**3038**	226	1902	910	515	41	344	130
1966/67	2047	1212	**3259**	222	2073	964	221	(4)	171	54
1967/68	2330	1284	**3614**	293	2234	1087	355	71	161	123
1968/69	2657	1559	**4216**	385	2564	1267	602	92	330	180
1969/70	2914	1713	**4627**	429	2687	1511	411	44	123	244
1970/71	3102	1914	**5016**	459	2886	1671	389	30	199	160
1971/72	3482	2296	**5778**	615	3301	1862	762	156	415	191
1972/73	3739	2587	**6326**	843	3516	1967	548	228	215	105
1973/74	3926	2734	**6660**	938	3608	2114	334	95	92	147
1974/75	3871	3057	**6928**	991	3735	2202	268	53	127	88
1975/76	3994	3263	**7257**	1065	3963	2229	329	74	228	27
1976/77	4052	3489	**7541**	1140	4091	2310	284	75	128	81
1977/78	4320	3765	**8085**	1235	4361	2489	544	95	270	179
1978/79	4485	4046	**8531**	1362	4508	2661	446	127	147	172
1979/80	4782	4229	**9011**	1497	4599	2915	480	135	91	254
1980/81	4704	4385	**9089**	1587	4579	2923	78	90	20	8
1981/82	4830	4713	**9543**	1601	4798	3144	454	14	219	221
1982/83	4704	4869	**9573**	1564	4884	3125	30	(37)	86	19
1983/84	4844	5182	**10026**	1641	5188	3197	453	77	304	72
1984/85	5007	5565	**10572**	1790	5354	3428	546	149	166	231

Growth in On-Campus Student Registration 1948-2002										
YEAR	UNIVERSITY			CAMPUS			YEARS INCREASE			
	Male	Female	Total	C.H.	MO.	St. A.	Univ.	C.H.	MO.	St. A.
1985/86	5082	5636	**10718**	1902	5088	3728	146	112	(266)	300
1986/87	5017	5772	**10789**	2007	4979	3803	71	105	(109)	75
1987/88	5285	6209	**11494**	2103	5235	4156	714	96	256	364
1988/89	5336	6560	**11896**	2185	5502	4209	402	82	267	53
1989/90	5403	6777	**12180**	2264	5769	4147	284	79	267	(62)
1990/91	5459	7169	**12628**	2408	6083	4137	448	144	314	(10)
1991/92	5716	7659	**13375**	2562	6284	4529	747	154	201	392
1992/93	5938	8058	**13996**	2547	6502	4947	621	(15)	218	418
1993/94	6298	8933	**15231**	2811	7229	5191	1235	264	727	244
1994/95	6120	9484	**15604**	2870	7503	5231	373	59	274	40
1995/96	6376	10177	**16553**	3105	8136	5312	949	235	633	81
1996/97	6646	10867	**17513**	3232	8274	6007	960	127	138	695
1997/98	6969	11895	**18864**	3568	8993	6303	1351	336	719	296
1998/99	6894	12451	**19345**	3641	9070	6634	481	73	77	331
1999/2000	7025	12800	**19825**	3993	8972	6860	480	352	(98)	226
2000/01	6805	12660	**19465**	3740	8758	6967	-360	(253)	(214)	107
2001/02**	7001	13270	**20271**	3977	8653	7641	806	237	(105)	674
2002/03	7708	14755	**22463**	4359	9440	8664	2192	382	787	1,023

**The total student population (comprising on-and off-campus students) for the 2002/2003 academic year was 26,796 with 8,762 males and 18,034 females. In the previous academic year, the total was 24,255 with 7,924 males and 16,331 females.

Source: UWI Internal Statistics

APPENDIX XIII

UTECH'S ENROLMENT

	Total
1986	3,475
1987	3,630
1988	4,126
1989	4,694
1990	5,416
1991	5,484
1992	5,611
1993	5,916
1994	5,945
1995	6,374
1996	6,770
1997	7,102
1998	6,579
1999	6,055
2000	7,550
2001	7,375
2002	6,733
2003	7,187

CAST was given authority under the CAST Scheme of 1986 to grant degrees. At such time it entered HE in that year. Not all the programmes however where HE programmes and they were phased in over time. After 1995 there was a structured effort to convert all programmes from Under Graduate to Graduate. The total conversion was achieved in 2001.

APPENDIX XIV
JAMAICA'S ECONOMIC INDICATORS
1970 – 1980

	Growth of Real GDP	Growth of Real GDP per capita a)	Fixed Capital Formation/ GDP	Final Consumption/ GDP	Employees Wages/ GDP	Unemployment Rate	Consumer Price Increase b)	Net Foreign Reserve J$M	Net External Debt J$M c)
1970	12.1%	10.6%	31.4%	72.6%	50.1%	n/a	7.7%	95.6	80.3
1971	2.9%	1.4%	27.8%	75.2%	50.0%	n/a	5.1%	132.2	82.0
1972	9.6%	8.1%	25.5%	81.0%	52.4%	23.0%	8.2%	88.7	96.0
1973	0.9%	-0.6%	25.8%	78.3%	53.8%	22.0%	28.9%	76.1	150.4
1974	-4.1%	-5.6%	22.0%	86.1%	54.0%	21.2%	22.1%	130.2	243.3
1975	-0.7%	-2.2%	23.6%	84.8%	55.8%	20.5%	11.4%	58.5	353.0
1976	-6.6%	-8.1%	16.7%	90.4%	56.6%	22.4%	8.3%	(181.4)	421.5
1977	-1.6%	-3.1%	11.7%	89.6%	55.6%	24.2%	16.1%	(196.0)	452.4
1978	-0.3%	-1.8%	13.4%	83.5%	52.2%	24.5%	47.0%	(447.0)	1,138.4
1979	-2.0%	-3.5%	17.6%	82.6%	51.9%	27.8%	24.3%	(758.0)	1,290.8
1980	-5.4%	-6.9%	15.7%	88.1%	51.7%	27.4%	24.7%	(821.2)	1,544.9

Source Department of Statistics, National Income and Product 1980 and Statistical Abstract of Jamaica 1979; Bank of Jamaica, Statistical Digest, December 1981

Notes

a) The average population growth rate of 1.5% annually has been applied throughout to avoid yearly fluctuations in the rate of emigration

b) January - January

c) Year end figures

APPENDIX XV
UTECH'S COSTING METHODOLOGY

COSTING OF PROGRAMMES IN EDUCATIONAL INSTITUTION – PART 1

Kofi K. Nkrumah-Young

Presented at Conference of the Bursars' Association of Jamaica
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THE PURPOSE OF COSTING

Having established our operational budget (See Appendix 1) it is important to translate that budget into a per student cost. In other words we need to know how much it takes to educate a student using the budget we have established. By so doing we are led into a branch of accounting called costing. This is defined by Horngren and Sundem (1993) as "the techniques used to determine the cost of a product or service by collecting and classifying costs and assigning them to cost objects". It is very important to go through this exercise because it provides useful information for:

1. **Benchmarking**. Institutions' operational inefficiencies can be camouflaged in total expenditures, which give no information on per unit cost. In order to favourably compare institutions of varying sizes it is important to provide the common basis on which to do such. Costing provides the basis for such comparison.

Institution	Expenditure	Student Numbers	Per Student Cost
A	$ 2,000,000	20	$ 100,000
B	$ 3,000,000	25	$ 120,000

2. **Control**. In a typical organization there are many control systems – for example Production Control, Quality Control, and Inventory Control. Cost control however monitors the results of all activities and control systems in the organization. This is because it captures

    - The detailed analysis and location of all expenditure
    - The calculation of job and product costs
    - The analysis of losses and scrap
    - The monitoring of labour and departmental efficiency and the other outputs of the system.

3. **Decision Making**. In choosing between alternatives an important factor is the financial implications. Information on costs is therefore a key factor in signifying the financial implication on an alternative.

4. **Pricing**. In determining the price to charge the market for our product one has to be clear on the cost of production. After ascertaining such information then there are the other factors to be considered such as the type of market the institution is operating in, the degree of competition, demand, and the state of the economy.

AVERAGE METHODS

The simplest way of calculating the cost per student is to divide the total expenditure by the amount of students. However because there are different modes of delivery it is first necessary to convert all modes to one common factor.

Full Time Equivalents (FTE)
Traditionally universities have used the Full Time Equivalent method. A full time student is considered as one unit and a part time student is considered in proportion to the full time based on an agreed factor. In the example that is being used lecture hours per programme is used as the factor. If a full time programme has a total lecturing hours of 40 per week and a part time has 10 hours per week then the FTE student is 0.25. Another factor that can be used is the credit hours per course. This paper will concentrate on the lecturing hour factor, as there is no uniform system of credits in Jamaica at this time.

Simple Average

In using simple average the following steps are taken: -

Step 1 Ascertain the full time and part time hours.

F_d = Full time hrs for an academic department
P_d = Part time hrs for the programmes in an academic department

Step 2 Calculate the Full time Equivalent for each academic department **FTE_d**

$$FTE_d = F_d + P_d/F_d$$

Step 3 Calculate the FTE for the institution FTE

$$FTE = \Sigma \; FTE_d$$

Student Numbers for Institution X

	Home Econ	English	Science	Math	Total
Full Time Numbers	50	100	75	80	305
Part Time Numbers	10	20	5	20	55
Hr. Full time	40	40	40	40	160
Hr. Part time	20	15	15	10	60
PT - FTE	3.75	7.5	1.875	7.5	21
FTE	**54**	**108**	**77**	**88**	**326**

Step 4 Calculate the per student cost **C**

C = E / FTE Where **E**= The tuition related expenditures

C = 112 963 400 / 326
= 346 913

The methodology is very simple, however its gives an average for the institution and does not differentiate between costs for programmes. Efficiency could be compromised, as the low costing programmes would mask any inefficiency of the high cost ones.

ALLOCATING THE COSTS.

Before allocating costs, the institution would first group the elements of cost into categories and then seek to appropriate the support service costs into the revenue producing centres. In the final stage the per unit cost is calculated.

STAGE ONE: - GROUPING THE ELEMENTS OF COSTS WITHIN THE UNIVERSITY.
The budget is divided into operational areas each of which is called a "Budget Centre". In analyzing the centres it can be seen that they can be grouped into four areas. These are:

1. **Core Function Revenue producing areas**: These are those centres, which provide the core function of the institution – teaching and research, and from which most of the income of the institution is derived. In the example being used the academic departments are:

    i. Home Economic
    ii. English
    iii. Science
    iv. Mathematic

Expenditure of the Academic Departments

	Home Econ	English	Science	Math
Compensation				
Academic	3,600,000	9,600,000	7,200,000	9,600,000
Administrative	750,000	750,000	750,000	750,000
Technician.	500,000	0	1,000,000	0
Ancillary	0	0	0	0
	4 850 000	**10 350 000**	**8 950 000**	**10 350 000**
Travelling				
Upkeep	360,000	960,000	720,000	960,000
Mileage	79,200	211,200	158,400	211,200
Foreign	100,000	50,000	50,000	50,000
	539 200	**1 221 200**	**928 400**	**1 221 200**

	Home Econ	English	Science	Math
Rental	**10 000**	**0**	**15 000**	**0**
Utilities				
Telephone	18,000	30,000	12,000	14,400
Water				
Electricity				
	18 000	**30 000**	**12 000**	**14 400**
Other good & Services				
Uniform	150,000	270,000	270,000	270,000
Reference Material				
Class Material	1,000,000	50,000	750,000	75,000
Repairs - Machinery	200,000	100,000	120,000	50,000
Repairs - Building				
Grounds Upkeep				
Sanitation				
Consultancies				
Advertising				
Postal & Courier				
Security				
Audit				
Motor Vehicle				
Depreciation	7,500,000	3,750,000	7,500,000	3,750,000
Misc.	221,250	104,250	216,000	103,625
	9 071 250	**4 274 250**	**8 856 000**	**4 248 625**
Banking Activities				
Retirement Benefits	**242 500**	**517 500**	**447 500**	**517 500**
Grants & Contributions	**50 000**	**50 000**	**50 000**	**50 000**
Total Recurrent	**14 780 950**	**16 442 950**	**19 258 900**	**16 401 725**

2. **Support Centres**: Those which solely exist to provide centralized support mainly to the revenue producing areas and by so doing allow those areas to share costs for indirect expenditure. The example shows three Budget Centres would fall in this category.

   i. Administration – (Principal's Office, Bursary, Central Admin.)
   ii. Library
   iii. Maintenance

Expenditure for the Support Centres

	Library	Admin	Maintenance
Compensation			
Academic	0	0	0
Administrative	3,750,000	5,250,000	1,500,000
Technician.	0	0	0
Ancillary	0	0	7,500,000
	3,750,000	5,250,000	9,000,000
Travelling			

Upkeep	240,000	480,000	120,000
Mileage	52,800	52,800	26,400
Foreign	30,000	150,000	0
	322,800	682,800	146,400
Rental	0	0	0
Utilities			
Telephone	18,000	48,000	18,000
Water			120,000
Electricity			240,000
	18,000	48,000	378,000
Other good & Services			
Uniform	150,000	210,000	810,000
Reference Material	3,000,000		
Class Material			
Repairs - Machinery	50,000	100,000	200,000
Repairs - Building			2,000,000
Grounds Upkeep			500,000
Sanitation			500,000
Consultancies		500,000	
Advertising		200,000	
Postal & Courier		25,000	
Security			120,000
Audit		400,000	
Motor Vehicle			200,000
Depreciation	11,250,000	1,875,000	2,625,000
Misc.	361,250	82,750	173,875
	14,811,250	3,392,750	7,128,875
Banking Activities		100,000	
Retirement Benefits	187,500	262,500	450,000
Grants & Contributions	50,000	50,000	50,000
Total Recurrent	19,139,550	9,786,050	17,153,275

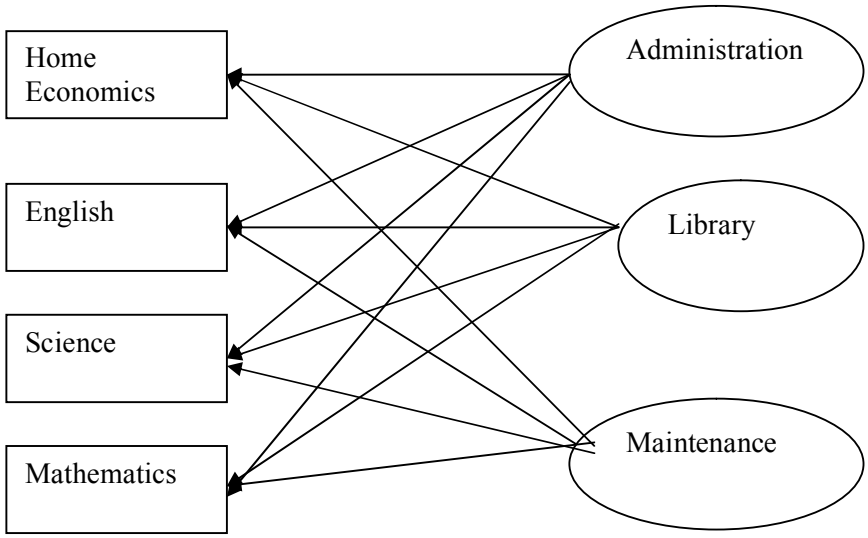
3. **Self-Financing Centres**: Budget Centres under this classification charge directly for the services they provide, recover fully for such services and have surplus as a motive. Only two budget centres are identified. They are:

    i. Cafeteria
    ii. Housing and Accommodation

STAGE TWO: - ALLOCATION OF COSTS TO THE CORE FUNCTION REVENUE PRODUCING AREAS

The Self-Financing Centres are not considered as part of this costing exercise because direct payments are received and the tuition fees (subvention or students contribution) are not expected to cover their costs. The main challenge then is to allocate the Support Service costs to the Core Function Revenue Producing areas. The following diagram demonstrates what is to be done.

Allocating Support Service Costs to the Core Function Revenue Producing Centres



The basis for allocating the overhead costs is the main focus of this paper as it seeks to argue for a most equitable method for such allocation.

Methods for Allocating Shared Costs to the Revenue Producing Areas

There are several bases on which support service costs may be allocated. The rule of thumb is that cost should be allocated based on the nature of the activity or the causes for the costs - the cost driver. Educational institutions have traditionally argued for and used a lump sum system. The traditional approach is called Absorption costing and is the process by which service/overhead costs are absorbed into the revenue producing areas using one or two factors. FTE is such a factor. The steps are:

Step 1: Calculate the students' weight for each academic department. This was done above. FTE_d

$$\mathbf{SW_d} = \mathbf{FTE_d} / \mathbf{FTE}$$

	FTE_d	FTE Weights
Home Econ.	54	0.1651
English	108	0.3301
Science	77	0.2361
Math	88	0.2687
FTE	326	1.0000

Step 2: Identify the Direct cost for each academic department (See above)

	FTE_d	**Direct Cost**
Home Econ.	54	14,780,950
English	108	16,442,950
Science	77	19,258,900
Math	88	16,401,725
	326	$ 66,884,525

Step 3: Sum all the Shared cost **SC**

	FTE_d	Direct Cost	Shared Cost
Home Econ.	54	14,780,950	
English	108	16,442,950	
Science	77	19,258,900	
Math	88	16,401,725	
Library			19,139,550
Admin			9,786,050
Maintenance			17,153,275
Total	326	66,884,525	46,078,875

Step 4 Use the $\mathbf{SW_d}$ to allocate the total indirect cost

	FTE	Direct Cost	Indirect Cost	Indirect cost Absorb by a Single Factor
Home Econ	54	14,780,950		7,606,110
English	108	16,442,950		15,212,220
Science	77	19,258,900		10,878,506
Math	88	16,401,725		12,382,039
Library			19,139,550	
Admin			9,786,050	
Maintenance			17,153,275	
Total	326	66,884,525	46,078,875	46,078,875

For the Department of Science, the portion of the shared costs that it would absorb would be calculated as follows:-

$$\mathbf{SC_s} = \mathbf{SC} * \mathbf{SW_d}$$
$$= \mathbf{\$46,078,875} * \mathbf{0.2361}$$
$$= \mathbf{\$\ 10\,878\,506}$$

Step 5:- Compute Total Departmental Cost $\mathbf{TC_d}$

$$\mathbf{TC_d} = \mathbf{DC_d} + \mathbf{SC_d}$$

E.g. Department of Science

$$TC_s = DC_s + SC_s$$
$$TC_s = \$19{,}258{,}900 + \$10{,}878{,}506$$
$$= \$30{,}137{,}406$$

	FTE	Direct Cost	Indirect Cost	Indirect cost Absorb by a Single Factor	Total Cost after Single Factor Allocation
Home Econ.	54	14,780,950		7,606,110	22,387,060
English	108	16,442,950		15,212,220	31,655,170
Science	77	19,258,900		10,878,506	30,137,406
Math	88	16,401,725		12,382,039	28,783,764
Library			19,139,550		
Admin			9,786,050		
Maintenance			17,153,275		
Total	326	66,884,525	46,078,875	46,078,875	112,963,400

Stage 6 Calculating the per unit cost – using SFCA

The cost per student for each academic department (C_d) is found as follows

$$C_d = TC_d / FTE_s$$

$$C_s = TC_s / FTE_d$$

$$C_s = \$30{,}137{,}406 / 77$$
$$= \$\ 392{,}031$$

	FTE	Direct Cost	Indirect Cost	Indirect cost Absorb by a Single Factor	Total Cost after Single Factor Allocation	Cost per Student based on SFCA
Home Econ	54	14,780,950		7,606,110	22,387,060	416,503
English	108	16,442,950		15,212,220	31,655,170	294,467
Science	77	19,258,900		10,878,506	30,137,406	392,031
Math	88	16,401,725		12,382,039	28,783,764	328,957
Library			19,139,550			
Admin			9,786,050			
Maintenance			17,153,275			
Total	326	6,884,525	46,078,875	46,078,875	112,963,400	346,913

Assessment of the traditional absorption costing

The main advantage in using the traditional absorption costing method is that it is relatively simple. However there are some problems, which are described hereunder.

1. The methodology does not however address high-powered equipment use programmes as well as that commanding high volume plant usage.

2. It ignores maintenance and physical resource costs for the self-financing and subsidized areas.

3. As a direct method of allocation it "ignores other service departments when any given service department is allocated to the revenue producing (operating) department".

4. The issue of service being rendered between the Core Function Revenue Producing Areas is not addressed. The English Department is required to teach that subject to all other departments. The matter of charging the other departments for this service is not dealt with.

Multiple Factors Cost Allocation Model (MFCA) or Activity Base Costing (ABC)
The Multiple Factors Cost Allocation Model (MFCA) is now being created to address the points raised above. In this model FTE is still necessary. However instead of having this as the only factor there are several other variables used to allocate shared cost, several steps in allocation and re-allocation, and a final allocation among the Revenue Producing areas for services rendered between them.

Step 1: - Allocate the shared service using the factors mentioned.

Basis for Allocating Shared Educational Costs

Shared Service	**Allocation Factor**
Service Teaching	Teaching Hours
Administration	Number of Personnel (Staff and Students)
Library	Number of Personnel)
Maintenance	Floor Space
Final Stage of Shared Cost	FTE

See Appendix II for the statistical information. When the allocation is done the following is the result:

Allocation of Costs using the Multiple Factor Cost Allocation Model

	Home Econ	English	Science	Math	Library	Admin	Maintenance	Direct Cost
Home Econ	14,780,950	2,466,443	4,814,725	1,640,173	2,835,042	1,918,833	3,363,387	14,780,950
English		8,221,475	-	1,640,173	5,621,828	959,417	1,681,694	16,442,950
Science		3,288,590	12,518,285	4,100,431	4,143,987	1,918,833	3,363,387	19,258,900
Math		2,466,443	1,925,890	9,020,949	4,656,707	959,417	1,681,694	16,401,725
Library					241,280	2,878,250	5,045,081	19,139,550
Admin					337,792	479,708	840,847	9,786,050
Maintenance					1,302,913	671,592	1,177,186	17,153,275

Total	**14 780 950**	**16 442 950**	**19 258 900**	**16 401 725**	**19 139 550**	**9 786 050**	**17 153 275**	**112 963 400**

Step 2: - Re-Allocate the residual cost from the support centres to the CFRPA using FTE_d

	Cost after first absorption	Library	Admin	Maintenance	Cost after final absorption
Home Econ	31,819,553	1,347,709	273,739	520,241	33,961,241
English	18,124,586	2,695,419	547,477	1,040,481	22,407,963
Science	29,333,514	1,927,538	391,510	744,065	32,396,627
Math	20,711,099	2,193,945	445,621	846,903	24,197,569
Library	8,164,611				
Admin	1,658,347				
Maintenance	3,151,690				
Total	**112 963 400**	**8 164 611**	**1 658 347**	**3 151 690**	**112 963 400**

Stage 3 Calculating the per unit cost – using MFCA

The cost per student is calculated as follows:

$$C_d = TC_d \ / \ FTE_d$$

$$C_s = \$\ 32\,396\,627 \ /77$$
$$= \$\ 421\,420$$

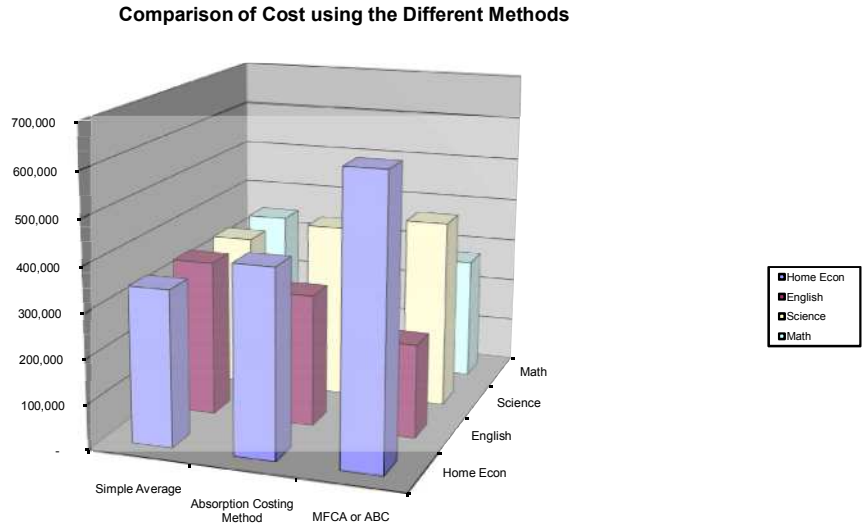
CONCLUSIONS AND RECOMMENDATIONS

The alternative to cost allocation is to charge expenses directly for service immediately on occurrence. In this case everything would become direct cost and the FTE could be used to calculate the per student cost per programme. This is the only way to be 100% sure about the total cost to operate the core function revenue producing area. To do this however would incur additional cost. The cost for administrating such a system would increase dramatically as there would be the need for more accounting, procurement and administrative staff to maintain the system. The idea of gaining from economies of scale would also be illuminated.

In allocating costs, this paper has considered the traditional absorption costing technique and Activity Based Costing. The traditional technique was termed "the Single Factor Cost Allocation Model" and the ABC was coined "The Multiple Cost Allocation Model. A comparison of cost between the three models as follows:

	Simple Average	Absorption Costing Method	MFCA or ABC
Home Econ	346,913	416,503	631,837
English	346,913	294,467	208,446
Science	346,913	392,031	421,420

Math	346,913	328,957	276,544



The simple average method, which shows the effect of cross subsidization, evens the cost across the board. The single factor cost allocation model show a differentiation between cost but because there are several factors that drive cost it does not give a true reflection of the cost effectiveness of the programmes. Using the several cost drivers to allocate cost gives a more accurate picture of the cost of delivering educational programmes.

The implications for using the MFCA model are:

1. How accounting information are captures in educational institutions.

2. The capturing of information about cost drivers.

BUDGET FOR INSTITUTION X

	Home Econ	English	Science	Math	Library	Admin	Maintenance	Total
Compensation								
Academic	3,600,000	9,600,000	7,200,000	9,600,000	0	0	0	30,000,000
Administrative	750,000	750,000	750,000	750,000	3,750,000	5,250,000	1,500,000	13,500,000
Technician.	500,000	0	1,000,000	0	0	0	0	1,500,000
Ancillary	0	0	0	0	0	0	7,500,000	7,500,000
	4 850 000	**10 350 000**	**8 950 000**	**10 350 000**	**3 750 000**	**5 250 000**	**9 000 000**	**52 500 000**
Travelling								
Upkeep	360,000	960,000	720,000	960,000	240,000	480,000	120,000	3,840,000
Mileage	79,200	211,200	158,400	211,200	52,800	52,800	26,400	792,000
Foreign	100,000	50,000	50,000	50,000	30,000	150,000	0	430,000
	539 200	**1 221 200**	**928 400**	**1 221 200**	**322 800**	**682 800**	**146 400**	**5 062 000**
Rental	**10 000**	**0**	**15 000**	**0**	**0**	**0**	**0**	**25 000**
Utilities								0
Telephone	18,000	30,000	12,000	14,400	18,000	48,000	18,000	158,400
Water							120,000	120,000
Electricity							240,000	240,000
	18 000	**30 000**	**12 000**	**14 400**	**18 000**	**48 000**	**378 000**	**518 400**
Other good & Services								0
Uniform	150,000	270,000	270,000	270,000	150,000	210,000	810,000	2,130,000
Reference Material					3,000,000			3,000,000
Class Material	1,000,000	50,000	750,000	75,000				1,875,000
Repairs - Machinery	200,000	100,000	120,000	50,000	50,000	100,000	200,000	820,000
Repairs - Building							2,000,000	2,000,000
Grounds Upkeep							500,000	500,000
Sanitation							500,000	500,000
Consultancies						500,000		500,000
Advertising						200,000		200,000
Postal & Courier						25,000		25,000
Security							120,000	120,000
Audit						400,000		400,000
Motor Vehicle							200,000	200,000
Depreciation	7,500,000	3,750,000	7,500,000	3,750,000	11,250,000	1,875,000	2,625,000	38,250,000
Misc.	221,250	104,250	216,000	103,625	361,250	82,750	173,875	1,263,000
	9 071 250	**4 274 250**	**8 856 000**	**4 248 625**	**14 811 250**	**3 392 750**	**7 128 875**	**51 783 000**
Banking Activities						**100 000**		**100 000**
								0
Retirement Benefits	**242 500**	**517 500**	**447 500**	**517 500**	**187 500**	**262 500**	**450 000**	**2 625 000**
								0
Grants & Contributions	**50 000**	**50 000**	**50 000**	**50 000**	**50 000**	**50 000**	**50 000**	**350 000**
Total Recurrent	**14 780 950**	**16 442 950**	**19 258 900**	**16 401 725**	**19 139 550**	**9 786 050**	**17 153 275**	**112 963 400**

STATISTICAL INFORMATION OF THE HYPOTHETICAL DEPARTMENTS

	Home Econ	English	Science	Math	Library	Admin	Maintenance	Total
Staffing								
Academic	3	8	6	8	0	0	0	25
Administrative	1	1	1	1	5	7	2	18
Technician.	1	0	2	0	0	0	0	3
Anciliary	0	0	0	0	0	0	25	25
	5	9	9	9	5	7	27	71
Student								
Full Time Numbers	50	100	75	80	0	0	0	305
Part Time Numbers	10	20	5	20	0	0	0	55
Hr. Full time	40	40	40	40	0	0	0	160
Hr. Part time	20	15	15	10	0	0	0	60
Space Occupied	**20 000**	**10 000**	**20 000**	**10 000**	**30 000**	**5 000**	**7 000**	**102 000**
FTE Student								
Full Time Numbers	50	100	75	80				305
Part Time Numbers	10	20	5	20				55
PT - FTE	3.75	7.5	1.875	7.5				21
FTE	**54**	**108**	**77**	**88**				**326**
Students + Staff	**58.7500**	**116.5000**	**85.8750**	**96.5000**	**5.0000**	**7.0000**	**27.0000**	**397**
Personnel Weights	**0.1481**	**0.2937**	**0.2165**	**0.2433**	**0.0126**	**0.0176**	**0.0681**	**1**
Students Weights	**0.1651**	**0.3301**	**0.2361**	**0.2687**	**0.0000**	**0.0000**	**0.0000**	**1**
Space Occupied	**0.1961**	**0.0980**	**0.1961**	**0.0980**	**0.2941**	**0.0490**	**0.0686**	**1**
Teaching Programme								
Home Econ	1.00	0.15	0.25	0.10				
English	0.00	0.50	0.00	0.10				
Science	0.00	0.20	0.65	0.25				
Math	0.00	0.15	0.10	0.55				
	1.000	**1.000**	**1.000**	**1.000**				

APPENDIX XVI
UTECH'S FINANCIAL RECORDS

UTech's Income and Expenditure Statements Mixed Financing

	1960	1961	1962	1963	1964	1965	1966
Income							
Subvention	26,130	40,092	52,400	68,349	79,569	85,049	96,770
Students Fees - Local							
Students	1,635	2,687	5,544	8,955			
Ministry of Education	4,515	2,034	2,508	2,235			
	6,150	4,721	8,052	11,190	12,024	15,542	15,036
Residential							
Students	0	300	1,350	1,920			
Ministry of Education	0	3,500	2,500	2,230			
	0	3,800	3,850	4,150	4,050	4,150	6,701
Investment Returns	0	0	0	0			714
Other Income	1,500	1,942	3,305	3,587	3,456	6,109	8,620
	1,500	1,942	3,305	3,587	3,456	6,109	9,335
Total Income	**33 780**	**50 555**	**67 607**	**87 276**	**99 099**	**110 850**	**127 842**
Expenditure							
Salaries							
Teaching	17,426	32,748	48,027	59,353	67,735	71,780	90,320
Non-Teaching	2,335	3,401	3,005	1,225	1,340	1,638	2,714
Total Staff Cost	19,761	36,150	51,032	60,578	69,075	73,418	93,034
Non Staff Costs	8,642	14,755	18,446	21,493	25,340	30,006	40,461
Total Expenditure	**28 402**	**50 904**	**69 478**	**82 071**	**94 415**	**103 424**	**133 495**
Surplus/(Deficit)	**5 378**	**(349)**	**(1 871)**	**5 205**	**4 684**	**7 426**	**(5 653)**

	1967	1968	1969	1970	1971	1972	1973
Income							
Subvention	97,279	104,011	106,502	213,385	318,660	438,633	559,751
Students Fees Local	11,687	15,102	24,755	54,219	65,019	84,491	107,157
Residential Fees	7,280	7,250	7,871	17,334	29,826	57,840	75,089
Investment Returns	988	1,222	1,193	3,024	3,027	2,449	4,765
Other Income	10,595	11,879	12,254	23,857	27,666	32,796	39,550
Total Income	**127 829**	**139 464**	**152 575**	**311 819**	**444 198**	**616 209**	**786 312**
Expenditure							
Salaries							
Teaching	82,885	92,139	94,034	210,502	305,933	372,789	486,666
Non-Teaching	3,370	3,813	4,185	8,659	12,302	16,683	21,112
Total Staff Cost	86,255	95,952	98,219	219,161	318,235	389,472	507,778
Non Staff Costs	41,368	47,672	53,464	130,743	167,518	264,742	266,532
Total Expenditure	**127 623**	**143 624**	**151 683**	**349 904**	**485 753**	**654 214**	**774 310**
Surplus/(Deficit)	**206**	**(4 160)**	**892**	**(38 085)**	**(41 555)**	**(38 005)**	**12 002**

UTech's Income and Expenditure Statements for Free Education Era

	1974	1975	1976	1977	1978	1979	1980
Income							
Subvention	1,081,209	1,295,982	1,707,967	2,215,056	2,609,334	N/A	N/A
Students Fees – Local	88,666	132,343	189,635	180,013	229,509	N/A	N/A
Residential	98,570	85,540	128,316	138,248	69,081	N/A	N/A
Investment Returns	5,247	11,456	7,436	6,816	9,641		
Other Income	82,506	100,571	142,609	162,282	246,288		
Total Income	**1 356 198**	**1 625 892**	**2 175 963**	**2 702 415**	**3 163 853**	**N/A**	**N/A**
Expenditure							
Salaries							
Teaching	867,626	1,074,140	1,331,690	1,636,122	1,850,961		
Non-Teaching	36,494	52,595	69,293	75,551	88,495		
Total Staff Cost	904,120	1,126,735	1,400,983	1,711,673	1,939,456	N/A	N/A
Non Staff Costs	411,101	645,811	846,009	900,847	1,078,967	**N/A**	**N/A**
Total Expenditure	**1 315 221**	**1 772 546**	**2 246 992**	**2 612 520**	**3 018 423**	**N/A**	**N/A**
Surplus/(Deficit)	**40 977**	**(146 654)**	**(71 029)**	**89 895**	**145 430**	**N/A**	**N/A**

	1981	1982	1983	1984	1985	1986
Income						
Subvention	4,087,098	4,394,284	4,507,116	5,674,362	5,854,764	7,081,013
Students Fees - Local						
Students	281,765		357,767		475,600	470,699
Other Students Fees					146,908	140,002
	281,765	334,853	357,767	431,559	622,508	610,701
Residential			129,131		202,284	290,964
Other Income	313,325	403,891	319,809	417,596	796,874	788,017
Total Income	**4 805 159**	**5 268 672**	**5 313 823**	**6 670 571**	**7 476 430**	**8 770 695**
Expenditure						
Salaries						
Teaching	2,381,624	2,833,820	3,151,867	4,530,343	4,570,919	4,798,012
Non-Teaching	326,589	404,841	396,336	425,017	458,741	560,031
Total Staff Cost	2,708,213	3,238,661	3,548,203	4,955,360	5,029,660	5,358,043
Non Staff Costs	1,997,949	2,181,985	2,409,486	2,509,336	3,088,381	3,539,527
Total Expenditure	**4 706 162**	**5 420 646**	**5 957 689**	**7 464 696**	**8 118 041**	**8 897 570**
Surplus/(Deficit)	**98 997**	**(151 974)**	**(643 866)**	**(794 125)**	**(641 611)**	**(126 875)**

UTech's Income and Expenditure Statements for the Period of the Cess

	1987	1988	1989	1990	1991	1992
Income						
Subvention	10,086,546	9,050,323	12,890,503	17,566,877	18,667,944	25,572,317
Students Fees - Local						
Students	1,201,863	1,527,345	1,404,132	1,483,884	3,021,847	2,236,534
Other Students Fees	(54,180)	167,692				4,291,678
	1,147,683	1,695,037	1,404,132	1,483,884	3,021,847	6,528,212
Residential	342,453	345,544	379,128	482,780	360,351	571,073
Students Fees - Overseas						6,276,974
Investment Returns			455,248	664,915	604,047	
Other Income	880,877	1,256,412	792,354	1,131,318	2,116,186	18,724,566
Total	**12 457 559**	**12 347 316**	**15 921 365**	**21 329 774**	**24 770 375**	**57 673 142**
Expenditure						
Salaries						
Teaching	7,886,504	7,525,232	10,632,847	14,840,872	17,819,023	31,935,212
Non-Teaching	646,476	665,164	822,879	1,394,801	1,295,853	1,419,527
Total Staff Cost	8,532,980	8,190,396	11,455,726	16,235,673	19,114,876	33,354,739
Non Staff Costs	4,339,857	5,507,673	6,551,737	8,898,635	13,700,129	21,096,428
	12 872 837	**13 698 069**	**18 007 463**	**25 134 308**	**32 815 005**	**54 451 167**
Surplus/(Deficit)	**(415 278)**	**(1 350 753)**	**(2 086 098)**	**(3 804 534)**	**(8 044 630)**	**3 221 975**

UTech's Income and Expenditure Statement for the Cost Sharing Period

	1993	1994	1995	1996	1997
Income					
Subvention	65,503,515	92,345,890	113,730,778	273,619,696	242,392,661
Students Fees - Local					
Students	6,775,984	54,145,509	62,748,633	91,191,389	135,964,094
Other Students Fees	14,111,586	7,375,938	12,319,879	17,432,270	46,452,658
	20,887,570	61,521,447	75,068,512	108,623,659	182,416,752
Residential	880,475	1,264,810	1,761,481	5,284,393	
Students Fees - Overseas	9,626,695	14,392,405	16,952,547	17,686,436	15,389,319
Investment Returns	3,585,045	16,899,384	18,723,163	36,142,049	31,899,905
Other Income	6,137,633	16,001,306	11,196,697	21,626,879	3,011,545
Total	**106 620 933**	**202 425 242**	**237 433 178**	**462 983 112**	**500 929 086**
Expenditure					
Salaries					
Teaching	55,269,300	98,309,097	103,543,288	228,915,711	219,155,348
Non-Teaching	706,533	1,066,355	1,407,208	1,752,024	19,174,152
Total Staff Cost	55,975,833	99,375,452	104,950,496	230,667,735	238,329,500
Non Staff Costs	35,814,768	76,429,109	113,874,874	212,257,648	241,234,922
	91 790 601	**175 804 561**	**218 825 370**	**442 925 383**	**479 564 422**
Surplus/(Deficit)	**14 830 332**	**26 620 681**	**18 607 808**	**20 057 729**	**21 364 664**

UTech's Income and Expenditure Statement for the Cost Sharing Period

	1998	1999	2000	2001	2002	2003
Income						
Subvention	638,890,528	938,679,046	433,366,836	646,622,746	792,248,091	824,579,947
Students Fees - Local						
Students	194,752,323	210,051,736	215,558,268	365,748,060	412,134,522	514,348,460
Other Students Fees	14,111,627	21,939,748	21,839,515	33,016,825	53,204,843	66,807,002
	208,863,950	231,991,484	237,397,783	398,764,885	465,339,365	581,155,462
Residential	25,381,721	40,460,318	1,612,986	13,602,291	12,138,105	13,499,482
Students Fees - Overseas	17,835,658	19,627,495	10,684,564			
Investment Returns	37,315,809	94,208,375	70,932,223	97,361,294	106,025,598	132,910,117
Other Income	9,545,355	24,847,372	55,855,360	57,521,150	62,069,448	100,647,099
Total	**937,833,021**	**,349,814,090**	**809,849,752**	**,213,872,366**	**,437,820,607**	**,652,792,107**
Expenditure						
Salaries						
Teaching	613,004,273	734,277,879	481,432,943	709,881,880	814,657,686	965,417,359
Non-Teaching	19,862,733	39,997,485	30,867,583	17,876,670	14,455,218	
Total Staff Cost	632,867,006	774,275,364	512,300,526	727,758,550	829,112,904	965,417,359
Non Staff Costs	273,918,137	268,593,086	220,335,046	347,116,028	386,622,574	517,583,488
	906,785,143	**,042,868,450**	**732,635,572**	**,074,874,578**	**,215,735,478**	**,483,000,847**
Surplus/(Deficit)	**31,047,878**	**306,945,640**	**77,214,180**	**138,997,788**	**222,085,129**	**169,791,260**

UTech's Balance Sheets during Mixed Financing

	1960	1961	1962	1963	1964	1965	1966
Grants and Funds	4,000			818	336	6,332	590
Accumulated Fund	5,378	5,029	3,158	8,362	13,046	20,472	14,132
Total Funds and Provisions	**9 378**	**5 029**	**3 158**	**9 180**	**13 382**	**26 804**	**14 722**
Current Assets							
Inventory	283						130
Accounts Receivable	2,685	684	1,139	2,483	175	3,803	2,170
Cash and Short-Term Deposits	13,149	14,494	5,534	21,618	27,321	42,276	21,555
Total Current Asset	**16 117**	**15 178**	**6 673**	**24 101**	**27 496**	**46 079**	**23 855**
Short-Term Liabilities	6,739	10,149	3,515	14,921	14,114	19,275	9,133
Working Capital	**9 378**	**5 029**	**3 158**	**9 180**	**13 382**	**26 804**	**14 722**
Net Assets	**9 378**	**5 029**	**3 158**	**9 180**	**13 382**	**26 804**	**14 722**

UTech's Balance Sheets during Mixed Financing

	1967	1968	1969	1970	1971	1972	1973
Grants and Funds	808	616	871	36,284	61,127	92,140	86,051
Accumulated Fund	14,772	10,612	11,505	(15,075)	(56,630)	(86,015)	14,099
	15 580	**11 228**	**12 376**	**21 209**	**4 497**	**6 125**	**100 150**
Current Assets							
Inventory	125	166	101	332	1,426	1,242	6,083
Accounts Receivable	6,438	4,551	2,246	401	4,814	9,211	60,611
Cash and Short-Term Deposits	34,574	24,949	33,691	39,105	37,727	63,600	125,909
	41 137	**29 666**	**36 038**	**39 838**	**43 967**	**74 053**	**192 603**
Short-Term Liabilities	25,557	18,438	23,662	18,629	39,470	67,928	92,453
Working Capital	**15 580**	**11 228**	**12 376**	**21 209**	**4 497**	**6 125**	**100 150**
Net Assets	**15 580**	**11 228**	**12 376**	**21 209**	**4 497**	**6 125**	**100 150**

UTech Balance Sheet during Free Education

	1974	1975	1976	1977	1978	1979	1980
Grants and Funds	65,810	91,644	77,921	36,863	36,159	**N/A**	**N/A**
Accumulated Fund	20,328	(126,326)	(129,855)	(39,960)	105,470	**N/A**	**N/A**
	86 138	**(34 682)**	**(51 934)**	**(3 097)**	**141 629**	**N/A**	**N/A**
Current Assets							
Inventory	5,080	24,262	30,974	17,905	34,996		
Accounts Receivable	75,389	65,221	71,379	70,812	88,011		
Cash and Short-Term Deposits	115,940	120,659	82,072	121,168	246,590		
	196 409	**210 142**	**184 425**	**209 885**	**369 597**	**N/A**	**N/A**
Short-Term Liabilities	110,271	244,824	236,359	212,982	227,968		
Working Capital	**86 138**	**(34 682)**	**(51 934)**	**(3 097)**	**141 629**	**N/A**	**N/A**
Net Assets	**86 138**	**(34 682)**	**(51 934)**	**(3 097)**	**141 629**	**N/A**	**N/A**

	1981	1982	1983	1984	1985	1986
Grants and Funds	540,765	853,662	940,345	1,344,032	1,135,971	1,635,456
Accumulated Fund	(108,662)	(260,636)	(904,502)	(1,698,627)	(1,904,875)	(2,031,750)
	432 103	**593 026**	**35 843**	**(354 595)**	**(768 904)**	**(396 294)**
Current Assets						
Inventory	46,053	39,046	36,348	38,370	51,997	53,449
Accounts Receivable	46,028	110,061	78,387	67,516	61,962	144,163
Cash and Short-Term Deposits	506,180	659,104	212,830	359,332	613,303	1,134,860
	598 261	**808 211**	**327 565**	**465 218**	**727 262**	**1 332 472**
Short-Term Liabilities	166,158	215,185	291,722	819,813	1,496,166	1,728,766
Working Capital	**432 103**	**593 026**	**35 843**	**(354 595)**	**(768 904)**	**(396 294)**
Net Assets	**432 103**	**593 026**	**35 843**	**(354 595)**	**(768 904)**	**(396 294)**

UTech's Balance Sheet during the Period of the CESS

	1987	1988	1989
Grants and Funds	2,025,765	2,779,175	5,883,041
Accumulated Fund	(2,447,028)	(3,797,781)	(5,883,879)
	(421 263)	**(1 018 606)**	**(838)**
Current Assets			
Inventory	55,856	81,296	41,457
Accounts Receivable	135,973	852,579	1,499,381
Cash and Short-Term Deposits	1,238,808	1,313,582	2,325,765
	1 430 637	**2 247 457**	**3 866 603**
Short-Term Liabilities	1,851,900	3,266,063	3,867,441
Working Capital	**(421 263)**	**(1 018 606)**	**(838)**
Net Assets	**(421 263)**	**(1 018 606)**	**(838)**

	1990	1991	1992
Grants and Funds	7,670,887	9,819,928	15,962,599
Accumulated Fund	(9,688,413)	(17,733,043)	(14,511,068)
	(2 017 526)	**(7 913 115)**	**1 451 531**
Current Assets			
Inventory	29,264	132,426	549,591
Accounts Receivable	2,106,791	1,442,049	4,366,107
Cash and Short-Term Deposits	2,344,112	3,940,204	6,500,326
	4 480 167	**5 514 679**	**11 416 024**
Short-Term Liabilities	6,497,693	13,427,794	9,964,493
Working Capital	**(2 017 526)**	**(7 913 115)**	**1 451 531**
Net Assets	**(2 017 526)**	**(7 913 115)**	**1 451 531**

UTech's Balance Sheet during Cost Sharing

	1993	1994	1995	1996	1997
Grants and Funds	21,789,681	44,026,601	57,165,270	71,283,413	45,520,209
Reserves & Provisions				29,144,142	44,896,209
Accumulated Fund	319,264	26,939,945	45,547,753	32,739,778	35,944,478
	22 108 945	**70 966 546**	**102 713 023**	**133 167 333**	**126 360 896**
Current Assets					
Inventory	677,303	2,007,231	3,598,122	5,078,099	2,876,032
Accounts Receivable	8,688,572	17,399,550	17,427,734	24,464,242	17,908,051
Cash and Short-Term Deposits	25,131,510	52,760,756	80,558,214	105,500,253	85,568,816
	34 497 385	**72 167 537**	**101 584 070**	**135 042 594**	**106 352 899**
Short-Term Liabilities	12,438,440	7,777,602	8,510,903	45,701,258	28,333,834
Working Capital	**22 058 945**	**64 389 935**	**93 073 167**	**89 341 336**	**78 019 065**
Investments	50,000	6,576,611	9,639,856	43,825,997	48,341,831
Net Assets	**22 108 945**	**70 966 546**	**102 713 023**	**133 167 333**	**126 360 896**

UTech's Balance Sheet during Cost Sharing

	1998	1999	2000	2001	2002	2003
Grants and Funds	63,870,013	98,220,565	131,954,125	105,808,811	127,810,799	146,736,966
Long Term Liabilities					116,515,289	115,713,452
Reserves & Provisions	93,098,369	370,605,718	434,526,987	579,242,013	725,614,113	861,242,795
Accumulated Fund	1,126,114,253	1,156,808,817	1,182,897,053	1,288,191,632	1,355,863,714	1,381,711,093
	1,283,082,635	**1,625,635,100**	**1,749,378,165**	**1,973,242,456**	**2,325,803,915**	**2,505,404,306**
Current Assets						
Inventory	2,682,620	3,808,013	4,259,353	3,511,354	3,054,752	3,802,299
Accounts Receivable	36,467,137	53,439,010	142,210,696	121,845,733	102,387,419	119,905,757
Advances	0	0	0	0	0	0
Cash and Short-Term Deposits	73,140,638	119,511,673	88,344,683	114,692,564	107,951,504	106,014,063
	112,290,395	**176,758,696**	**234,814,732**	**240,049,651**	**213,393,675**	**229,722,119**
Short-Term Liabilities	44,669,177	111,389,262	158,851,840	218,004,148	148,958,730	190,380,343
Working Capital	67,621,218	65,369,434	75,962,892	22,045,503	64,434,945	39,341,776
Investments	132,329,139	390,710,504	410,117,773	527,896,638	694,931,947	917,698,663
Long Term Receivable						
Fixed Assets	1,083,132,278	1,169,555,162	1,263,297,500	1,423,300,315	1,566,437,023	1,548,363,867
	1,215,461,417	**1,560,265,666**	**1,673,415,273**	**1,951,196,953**	**2,261,368,970**	**2,466,062,530**
	1,283,082,635	**1,625,635,100**	**1,749,378,165**	**1,973,242,456**	**2,325,803,915**	**2,505,404,306**

APPENDIX XVII
UWI'S FINANCIAL RECORDS

UWI's Income and Expenditure Statements - Mixed Financing

	1961	1962	1963	1964	1965	1966
Income						
Governments Contribution	2,091,632	2,150,426	2,100,470	3,056,582	3,005,658	3,546,890
Other Grants	247,602	205,902	251,834	196,000	241,900	292,750
Hospital - Pathological Serv.	145,998	159,546	171,888	199,802	212,286	214,068
Students Fees	65,648	85,458	106,484	150,884	189,284	230,156
Special Projects	245,124	263,472	285,582	633,392	1,053,934	1,532,618
Investment Returns	23,822	27,026	31,022	34,648	62,730	57,474
Other Income	87,810	1,518	2,482	3,690	1,080	1,988
Total Income	**2,907,636**	**2,893,348**	**2,949,762**	**4,274,998**	**4,766,872**	**5,875,944**
Expenditure						
Staff Costs	2,192,428	2,389,266	2,523,522	3,163,402	3,713,772	4,037,440
Projects	245,124	263,472	285,582	633,392	1,053,934	1,532,618
Total Expenditure	**2,437,552**	**2,652,738**	**2,809,104**	**3,796,794**	**4,767,706**	**5,570,058**
Surplus before provision and non-recurrent	**470,084**	**240,610**	**140,658**	**478,204**	**(834)**	**305,886**

	1967	1968	1969	1970	1971	1972	1973
Income							
Governments Contribution	4,488,718	4,887,985	5,218,682	5,869,584	7,397,089	7,920,731	10,283,313
Other Grants	424,630	411,433	356,564	299,790	268,170	220,848	193,767
Hospital - Pathological Serv.	250,496	256,286	262,966	268,952	306,143	327,319	393,437
Students Fees	251,134	280,784	324,186	348,272	378,355	454,058	493,146
Special Projects	1,635,346	2,168,680	2,018,824	2,173,673	2,047,128	2,037,147	2,233,928
Investment Returns	62,966	123,434	153,506	164,695	172,534	164,446	161,450
Other Income	7,608	8,048	4,922	3,762	25,164	29,781	150,962
Total Income	**7,120,898**	**8,136,650**	**8,339,650**	**9,128,728**	**10,594,583**	**11,154,330**	**13,910,003**
Expenditure							
Staff Costs	4,839,224	5,255,392	5,980,572	6,623,247	8,610,350	8,861,813	11,297,358
Projects	1,635,346	2,168,680	2,018,824	2,173,673	2,047,128	2,037,147	2,233,928
Total Expenditure	**6,474,570**	**7,424,072**	**7,999,396**	**8,796,920**	**10,657,478**	**10,898,960**	**13,531,286**
Surplus before provision and non-recurrent	**646,328**	**712,578**	**340,254**	**331,808**	**(62,895)**	**255,370**	**378,717**

UWI's Income and Expenditure - FREE EDUCATION Period

	1974	1975	1976	1977	1978	1979	1980
Income							
Governments Contribution	$13,457,810	$15,957,328	$23,050,823	$26,184,133	$35,978,631	$53,423,240	$59,650,362
Other Grants	$138,839	$117,506	$184,402	$193,618	$187,250	$257,771	$0
Hospital - Pathological Serv.	$532,858	$524,288	$652,738	$813,403	$860,804	$1,052,476	$1,268,352
Students Fees	$563,810	$689,398	$766,006	$1,033,669	$1,337,365	$1,760,121	$1,655,836
Special Projects	$3,670,403	$4,727,093	$4,554,935	$6,980,305	$12,321,179	$16,323,595	$21,450,190
Investment Returns	$169,289	$199,903	$242,984	$258,700	$391,870	$482,703	$679,161
Other Income	$61,270	$14,112	$57,427	$71,092	$76,250	$154,828	$126,481
Total Income	**$18,594,279**	**$22,229,628**	**$29,509,315**	**$35,534,920**	**$51,153,349**	**$73,454,734**	**$84,830,382**
Expenditure							
Staff Costs	$14,315,907	$16,904,961	$24,324,083	$28,113,964	$38,040,905	$56,389,200	$62,675,576
Projects	$3,670,403	$4,727,093	$4,554,935	$6,980,305	$12,321,179	$16,323,595	$21,450,190
Total Expenditure	**$17,986,310**	**$21,632,054**	**$28,879,018**	**$35,094,269**	**$50,362,084**	**$72,712,795**	**$84,125,766**
Surplus before provision and non-recurrent	**$607,969**	**$597,574**	**$630,297**	**$440,651**	**$791,265**	**$741,939**	**$704,616**

	1981	1982	1983	1984	1985	1986
Income						
Governments Contribution	$70,753,664	$81,305,428	$116,412,619	$163,528,744	$254,844,501	$261,049,095
Other Grants	$0	$0	$0	$0		$0
Hospital - Pathological Serv.	$1,394,129	$1,585,229	$1,895,262	$1,953,146	$2,458,814	$2,609,473
Students Fees	$2,008,881	$2,228,373	$2,207,930	$3,316,587	$6,699,609	$6,947,621
Special Projects	$23,471,530	$29,094,815	$43,340,547	$74,371,787	$131,059,580	$110,861,153
Common Service Fees	$0	$1,475,795	$1,385,505	$2,287,822	$3,660,027	$7,078,707
Investment Returns	$876,705	$1,158,062	$1,169,207	$1,810,009	$3,667,752	$3,467,502
Other Income	$178,575	$121,056	$171,969	$604,071	$612,699	$850,476
Total Income	**$98,683,484**	**$116,968,758**	**$166,583,039**	**$247,872,166**	**$403,002,982**	**$392,864,027**
Expenditure						
Staff Costs	$74,234,427	$86,820,442	$122,424,634	$173,058,220	$271,866,513	$279,347,073
Projects	$23,471,530	$29,094,815	$43,340,547	$74,371,787	$131,059,580	$110,861,153
Total Expenditure	**$97,705,957**	**$115,915,257**	**$165,765,181**	**$247,430,007**	**$402,926,093**	**$390,208,226**
Surplus before provision and non-recurrent	**$977,527**	**$1,053,501**	**$817,858**	**$442,159**	**$76,889**	**$2,655,801**

UWI's Income and Expenditure Statement - The Period of the CESS

	1987	1988	1989	1990	1991	1992
Income						
Governments Contribution	$284,879,670	$289,416,223	$299,572,482	$372,409,999	$573,359,376	$1,164,361,633
Other Grants	$0	$0	$0	$0	$0	$0
Hospital - Pathological Serv.	$3,390,988	$3,944,000	$4,419,000	$4,871,922	$5,626,099	$10,292,000
Students Fees	$7,615,425	$9,747,617	$9,313,787	$10,790,988	$12,605,560	$33,261,570
Special Projects	$108,194,796	$106,810,837	$96,395,268	$136,922,539	$169,226,265	$398,906,571
Common Service Fees	$8,309,266	$9,120,919	$8,602,108	$11,608,539	$19,897,059	$39,164,489
Investment Returns	$3,710,518	$2,631,673	$4,095,408	$9,558,232	$11,748,195	$6,459,059
Other Income	$609,976	$611,990	$453,332	$720,803	$915,277	$3,051,883
Total Income	**$416,710,639**	**$422,283,259**	**$422,851,385**	**$546,883,022**	**$793,377,831**	**$1,655,497,205**
Expenditure						
Staff Costs	$307,915,486	$308,257,516	$325,034,114	$398,698,883	$622,612,265	$1,267,128,949
Projects	$108,194,796	$106,810,837	$96,395,268	$136,922,539	$169,226,265	$398,906,571
Total Expenditure	**$416,110,282**	**$415,068,353**	**$421,429,382**	**$535,621,422**	**$791,838,530**	**$1,666,035,520**
Surplus before provision and non-recurrent	**$600,357**	**$7,214,906**	**$1,422,003**	**$11,261,600**	**$1,539,301**	**($10,538,315)**

UWI Income and Expenditure Statement - Cost Sharing Era

	1993	1994	1995	1996	1997
Income					
Governments Contribution	$1,740,602,803	$1,915,122,637	$2,726,708,461	$2,350,643,024	$4,149,323,976
Other Grants	$0	$0	$0	$0	$0
Hospital - Pathological Serv.	$9,251,493	$33,623,986	$54,815,356	$63,381,501	$75,593,948
Students Fees	$47,597,750	$353,188,374	$412,438,670	$475,120,799	$579,643,539
Special Projects	$460,548,257	$759,286,497	$1,017,986,857	$1,190,499,388	$974,314,241
Other Projects	$0	$0	$0	$0	$0
Commercial Operations	$0	$0	$0	$0	$0
Common Service Fees	$43,225,908	$61,536,280	$81,707,626	$81,166,299	$32,098,660
Investment Returns	$13,333,884	$39,818,292	$40,692,800	$43,990,996	$70,562,034
Other Income	$2,522,094	$4,491,618	$9,608,756	$12,933,990	$12,066,457
Total Income	**$2,317,082,189**	**$3,167,067,684**	**$4,343,958,526**	**$4,217,735,997**	**$5,893,602,855**
Expenditure					
Staff Costs	$1,814,069,352	$2,381,303,997	$3,325,971,669	$3,836,352,410	$4,873,090,855
Projects	$460,548,257	$759,286,497	$1,017,986,857	$1,190,499,388	$974,314,241
Total Expenditure	**$2,274,617,609**	**$3,140,590,494**	**$4,343,958,526**	**$5,026,851,798**	**$5,847,405,096**
Surplus before provision and non-recurrent	**$42,464,580**	**$26,477,190**	**$0**	**($809,115,801)**	**$46,197,759**

UWI Income and Expenditure Statement - Cost Sharing Era

	1998	1999	2000
Income			
Governments Contribution	$5,114,945,765	$5,399,111,057	$6,019,734,899
Other Grants	$0	$0	$0
Hospital - Pathological Serv.	$90,722,360	$99,047,500	$98,108,000
Students Fees	$912,004,827	$1,107,608,499	$1,265,208,792
Special Projects	$1,094,380,812	$1,425,779,164	$1,672,158,861
Other Projects	$0	$0	$0
Commercial Operations	$0	$0	$0
Common Service Fees	$214,577,131	$191,327,108	$234,809,599
Investment Returns	$224,733,039	$332,597,500	$400,974,681
Other Income	$43,785,496	$172,877,396	$211,892,434
Total Income	**$7,695,149,430**	**$8,728,348,224**	**$9,902,887,266**
Expenditure			
Staff Costs	$5,666,050,545	$6,361,744,095	$7,166,199,336
Projects	$1,094,380,812	$1,425,779,164	$1,672,158,861
Total Expenditure	**$6,760,431,357**	**$7,787,523,259**	**$8,838,358,197**
Surplus before provision and non-recurrent	**$934,718,073**	**$940,824,965**	**$1,064,529,069**

UWI Income and Expenditure Statement - Cost Sharing Era

	2001	2002	2003
Income			
Governments Contribution	$6,625,157,386	$7,304,827,683	$8,308,652,009
Other Grants	$0		$0
Hospital - Pathological Serv.	$109,557,000	$129,162,000	$134,429,000
Students Fees	$1,372,504,319	$1,562,207,465	$1,918,097,794
Special Projects	$1,685,835,939	$700,041,284	$776,345,670
Other Projects	$0	$1,345,766,398	$1,876,019,664
Commercial Operations	$0	$759,362,323	$921,780,414
Common Service Fees	$234,516,970	$0	$0
Investment Returns	$559,061,865	$410,742,318	$493,551,442
Other Income	$333,705,772	$459,259,877	$432,947,776
Total Income	**$10,920,339,251**	**$12,671,369,348**	**$14,861,823,769**
Expenditure			
Staff Costs	$8,268,029,311	$11,438,754,277	$14,192,785,786
Projects	$1,685,835,939	$700,041,284	$776,345,670
Total Expenditure	**$9,953,865,250**	**$12,138,795,561**	**$14,969,131,456**
Surplus before provision and non-recurrent	**$966,474,001**	**$532,573,787**	**($107,307,687)**

BALANCE SHEETS

UWI Balance Sheets - Mixed Financing

	1963	1964	1965	1966	1967	1968
Grants and Funds	15,983,046	17,229,148	18,634,928	19,544,666	21,127,850	22,772,008
Long Term Liabilities	0	0	0	0	0	0
Provisions	0	0	0	0	0	0
Accumulated Fund	707,290	1,279,968	1,309,586	971,362	1,351,404	1,955,916
Total Funds and Liabilities	**16,690,336**	**18,509,116**	**19,944,514**	**20,516,028**	**22,479,254**	**24,727,924**
Current Assets						
Inventory	95,516	87,436	91,290	88,826	143,338	95,540
Accounts Receivable	515,890	381,300	288,408	397,752	412,048	542,874
Advances	230,408	252,120	180,434	49,798	71,654	76,996
Cash and Short-Term Deposits	557,944	890,048	842,600	837,348	1,057,832	620,208
	1,399,758	**1,610,904**	**1,402,732**	**1,373,724**	**1,684,872**	**1,335,618**
Short-Term Liabilities	722,852	813,858	796,306	991,308	1,380,922	1,053,204
Working Capital	**676,906**	**797,046**	**606,426**	**382,416**	**303,950**	**282,414**
Investments	3,244,366	4,199,862	4,799,246	4,668,782	5,735,366	6,621,600
Long Term Receivable	0	0	0	0	0	0
Fixed Assets	12,769,064	13,512,208	14,538,842	15,464,826	16,439,938	17,823,910
	16,013,430	**17,712,070**	**19,338,088**	**20,133,608**	**22,175,304**	**24,445,510**
Net Assets	**16,690,336**	**18,509,116**	**19,944,514**	**20,516,024**	**22,479,254**	**24,727,924**

	1969	1970	1971	1972	1973
Grants and Funds	28,114,634	30,409,786	31,868,811	33,156,092	35,821,562
Long Term Liabilities	0	0	0	0	0
Provisions	0	2,237,615	2,921,854	2,345,359	2,786,797
Accumulated Fund	2,071,886	26,055	(276,811)	(324,375)	(234,298)
Total Funds & Liab	**30,186,520**	**32,673,456**	**34,513,854**	**35,177,076**	**38,374,061**
Current Assets					
Inventory	98,700	110,137	101,986	161,713	167,892
Accounts Receivable	462,272	672,401	1,026,008	1,181,634	1,562,547
Advances	65,334	169,696	410,876	619,212	932,212
Cash and Short-Term Deposits	761,946	709,670	258,382	475,209	1,006,115
	1,388,252	**1,661,904**	**1,797,252**	**2,437,768**	**3,668,766**
Short-Term Liabilities	1,219,112	1,277,042	1,188,689	1,860,107	1,164,722
Working Capital	**169,140**	**384,862**	**608,563**	**577,661**	**2,504,044**
Investments	7,714,764	7,590,606	8,197,960	8,413,634	8,875,092
Long Term Receivable	0	0	0	0	0
Fixed Assets	22,302,616	24,697,988	25,707,331	26,185,781	26,994,925
	30,017,380	**32,288,594**	**33,905,291**	**34,599,415**	**35,870,017**
Net Assets	**30,186,520**	**32,673,456**	**34,513,854**	**35,177,076**	**38,374,061**

UWI Balance Sheets for the Era of Free Education

	1974	1975	1976	1977	1978	1979	1980
Grants and Funds	$38,163,679	$40,344,367	$43,065,632	$46,865,099	$57,514,094	$69,508,308	$81,944,706
Reserves & Provisions	$2,923,202	$4,037,096	$6,008,815	$12,121,425	$15,240,780	$20,567,620	$23,751,654
Accumulated Fund	($837,530)	($416,793)	($86,576)	($160,173)	($473,697)	($874,779)	($890,874)
Total Funds and Liabilities	**$40,249,351**	**$43,964,670**	**$48,987,871**	**$58,826,351**	**$72,281,177**	**$89,201,149**	**$104,805,486**
Current Assets							
Inventory	$333,649	$428,781	$472,467	$586,936	$1,016,363	$1,485,250	$1,842,520
Accounts Receivable	$1,794,345	$2,342,807	$3,301,861	$4,768,956	$11,336,174	$8,931,520	$11,895,034
Advances	$346,545	$600,454	$826,882	$942,232	$2,172,958	$1,463,078	$5,545,101
Cash and Short-Term Deposits	$3,979,907	$3,863,865	$6,591,315	$12,704,381	$4,472,567	$10,103,596	$14,746,034
	$6,454,446	**$7,235,907**	**$11,192,525**	**$19,002,505**	**$18,998,062**	**$21,983,444**	**$34,028,689**
Short-Term Liabilities	$2,994,284	$3,242,499	$2,348,968	$5,815,434	$5,030,805	$8,473,872	$12,776,028
Working Capital	**$3,460,162**	**$3,993,408**	**$8,843,557**	**$13,187,071**	**$13,967,257**	**$13,509,572**	**$21,252,661**
Investments	$7,935,875	$9,312,643	$9,696,022	$12,339,203	$17,113,230	$25,370,870	$23,504,850
Long Term Receivable							
Fixed Assets	$28,853,314	$30,658,619	$30,448,292	$33,300,077	$41,200,690	$50,320,707	$60,047,975
	$36,789,189	**$39,971,262**	**$40,144,314**	**$45,639,280**	**$58,313,920**	**$75,691,577**	**$83,552,825**
Net Assets	**$40,249,351**	**$43,964,670**	**$48,987,871**	**$58,826,351**	**$72,281,177**	**$89,201,149**	**$104,805,486**

	1981	1982	1983	1984	1985	1986
Grants and Funds	$90,009,054	$98,490,626	$110,575,441	$150,157,327	$324,551,333	$323,023,855
Long Term Liabilities				$22,985,658	$42,419,894	$48,076,888
Reserves & Provisions	$25,408,934	$35,279,461	$65,725,801	$87,049,432	$156,619,047	$161,561,085
Accumulated Fund	($1,554,034)	($692,371)	($51,939)	$1,468,519	($814,363)	($1,012,855)
Total Funds & Liabilities	**$113,863,954**	**$133,077,716**	**$176,249,303**	**$261,660,936**	**$522,775,911**	**$531,648,973**
Current Assets						
Inventory	$2,108,959	$2,621,057	$2,462,212	$3,305,405	$6,290,701	$6,246,938
Accounts Receivable	$16,347,066	$35,011,337	$57,845,129	$69,278,838	$146,299,467	$139,080,577
Advances	$4,275,750	$6,841,876	$6,808,116	$12,483,602	$16,415,994	$20,002,176
Cash and Short-Term Deposits	$16,417,023	$8,113,794	$11,066,049	$25,556,879	$23,765,188	$53,858,018
	$39,148,798	**$52,588,064**	**$78,181,506**	**$110,624,724**	**$192,771,350**	**$219,187,709**
Short-Term Liabilities	$10,285,213	$12,759,464	$18,414,771	$41,735,324	$67,420,698	$50,192,102
Working Capital	**$28,863,585**	**$39,828,600**	**$59,766,735**	**$68,889,400**	**$125,350,652**	**$168,995,607**
Investments	$21,423,652	$26,152,470	$46,893,076	$76,073,826	$129,111,365	$99,208,687
Fixed Assets	$63,576,717	$67,096,646	$69,589,492	$116,697,710	$268,313,894	$263,444,679
	$85,000,369	**$93,249,116**	**$116,482,568**	**$192,771,536**	**$397,425,259**	**$362,653,366**
Net Assets	**$113,863,954**	**$133,077,716**	**$176,249,303**	**$261,660,936**	**$522,775,911**	**$531,648,973**

UWI Balance Sheets for the Period of the Cess

	1987	1988	1989	1990	1991	1992
Grants and Funds	$339,957,198	$352,999,496	$369,026,509	$450,786,045	$582,408,085	$1,285,443,654
Long Term Liabilities	$45,348,912	$45,341,346	$45,372,926	$52,296,711	$70,790,231	$154,032,716
Reserves & Provisions	$182,152,015	$212,365,631	$226,145,348	$243,303,550	$334,781,078	$743,299,157
Accumulated Fund	($1,832,571)	($2,592,474)	($3,472,751)	($5,072,577)	($7,823,497)	($40,344,034)
Total Funds & Liabilities	$565,625,554	$608,113,999	$637,072,032	$741,313,729	$980,155,897	$2,142,431,493
Current Assets						
Inventory	$5,473,890	$5,701,030	$5,916,084	$7,575,456	$12,557,955	$27,922,374
Accounts Receivable	$282,949,910	$306,317,218	$349,385,261	$286,909,390	$428,977,735	$1,121,886,029
Advances	$31,867,765	$26,788,118	$46,829,309	$41,837,550	$67,719,279	$117,008,041
Cash and Short-Term Deposits	$31,050,738	$23,967,090	$27,559,878	$21,419,625	$33,707,943	$87,557,900
	$351,342,303	$362,773,456	$429,690,532	$357,742,021	$542,962,912	$1,354,374,344
Short-Term Liabilities	$151,192,883	$136,069,335	$149,544,698	$166,385,940	$256,543,833	$616,207,462
Working Capital	$200,149,420	$226,704,121	$280,145,834	$191,356,081	$286,419,079	$738,166,882
Investments	$70,880,457	$66,048,951	$53,678,227	$151,838,366	$155,210,399	$182,958,881
Long Term Receivable						
Fixed Assets	$294,595,677	$315,360,927	$303,247,971	$398,119,282	$538,526,419	$1,221,305,730
	$365,476,134	$381,409,878	$356,926,198	$549,957,648	$693,736,818	$1,404,264,611
Net Assets	$565,625,554	$608,113,999	$637,072,032	$741,313,729	$980,155,897	$2,142,431,493

UWI Balance Sheets for the Cost Sharing Period

	1993	1994	1995	1996	1997
Grants and Funds	$1,614,658,670	$4,759,453,900	$5,635,722,565	$6,188,260,884	$6,462,821,511
Long Term Liabilities	$331,016,242	$442,958,050	$757,861,474	$1,257,121,468	$1,515,395,347
Reserves & Provisions	$881,181,123	$1,181,639,635	$2,008,857,527	$1,298,866,586	$2,325,060,816
Accumulated Fund	($19,921,469)	($22,344,805)	$23,971,235	$38,634,837	$73,452,147
Total Funds & Liabilities	**$2,806,934,566**	**$6,361,706,780**	**$8,426,412,801**	**$8,782,883,775**	**$10,376,729,821**
Current Assets					
Inventory	$34,559,407	$44,873,469	$42,281,681	$49,298,101	$46,909,518
Accounts Receivable	$1,478,187,606	$2,562,937,902	$2,430,374,828	$2,189,635,049	$2,643,525,137
Advances	$267,367,501	$138,038,890	$414,945,566	$631,657,390	$755,437,666
Cash and Short-Term Deposits	$179,840,901	$249,628,049	$268,254,070	$224,481,302	$553,803,720
	$1,959,955,415	**$2,995,478,310**	**$3,155,856,145**	**$3,095,071,842**	**$3,999,676,041**
Short-Term Liabilities	$1,026,600,953	$1,885,439,326	$1,107,696,887	$1,488,060,123	$1,716,107,798
Working Capital	**$933,354,462**	**$1,110,038,984**	**$2,048,159,258**	**$1,607,011,719**	**$2,283,568,243**
Investments	$458,730,086	$562,870,143	$916,954,957	$824,121,502	$1,542,988,243
Long Term Receivable					
Fixed Assets	$1,414,850,018	$4,692,186,071	$5,461,298,586	$6,351,750,554	$6,550,173,335
	$1,873,580,104	**$5,255,056,214**	**$6,378,253,543**	**$7,175,872,056**	**$8,093,161,578**
Net Assets	**$2,806,934,566**	**$6,365,095,198**	**$8,426,412,801**	**$8,782,883,775**	**$10,376,729,821**

UWI Balance Sheets for the Cost Sharing Period Cont'd

	1998	1999	2000
Grants and Funds	$6,124,656,494	$7,656,223,460	$9,041,332,277
Long Term Liabilities	$1,978,610,966	$2,828,630,711	$3,096,600,756
Reserves & Provisions	$3,183,765,547	$4,559,311,760	$4,590,678,136
Accumulated Fund	$326,638,371	$359,786,787	$528,600,756
Total Funds & Liabilities	**$11,613,671,378**	**$15,403,952,718**	**$17,257,211,925**
Current Assets			
Inventory	$57,373,006	$71,971,279	$74,262,653
Accounts Receivable	$2,047,967,654	$4,040,598,626	$3,188,990,496
Advances	$169,363,856	$346,764,804	$255,182,011
Cash and Short-Term Deposits	$1,833,081,015	$2,680,802,935	$3,554,562,672
	$4,107,785,531	**$7,140,137,644**	**$7,072,997,832**
Short-Term Liabilities	$774,765,655	$1,416,645,308	$1,052,822,754
Working Capital	**$3,333,019,876**	**$5,723,492,336**	**$6,020,175,078**
Investments	$1,123,539,523	$1,437,511,760	$2,438,746,510
Long Term Receivable			
Fixed Assets	$7,157,111,979	$8,242,948,622	$8,798,290,337
	$8,280,651,502	**$9,680,460,382**	**$11,237,036,847**
Net Assets	**$11,613,671,378**	**$15,403,952,718**	**$17,257,211,925**

	2001	2002	2003
Grants and Funds	$10,311,405,494	$3,106,504,787	$3,866,107,627
Long Term Liabilities	$3,154,028,734	$3,626,871,384	$4,718,000,105
Reserves & Provisions	$5,434,845,641	$13,522,208,983	$16,073,056,073
Accumulated Fund	$554,024,989	$1,056,920,589	$923,033,399
Total Funds & Liabilities	**$19,454,304,858**	**$21,312,505,743**	**$25,580,197,204**
Current Assets			
Inventory	$82,586,947	$115,050,768	$128,914,639
Accounts Receivable	$3,778,253,700	$3,040,276,636	$6,802,699,393
Advances	$378,482,506	$381,890,875	$409,164,348
Cash and Short-Term Deposits	$1,499,921,335	$6,482,288,646	$7,578,107,249
	$5,739,244,488	**$10,019,506,925**	**$14,918,885,629**
Short-Term Liabilities	$1,696,030,870	$1,184,645,778	$4,068,336,779
Working Capital	**$4,043,213,618**	**$8,834,861,147**	**$10,850,548,850**
Investments	$5,835,621,068	$1,594,078,188	$2,193,619,283
Long Term Receivable		$4,305,705	$4,343,984
Fixed Assets	$9,575,470,172	$10,879,260,703	$12,531,685,087
	$15,411,091,240	**$12,477,644,596**	**$14,729,648,354**
Net Assets	**$19,454,304,858**	**$21,312,505,743**	**$25,580,197,204**

APPENDIX XVIII
INTERVIEW QUESTIONS AND OBJECTIVES

ACTIVITY 1 - Review of Jamaica's Funding Policies

Objectives

(v) To identify the Higher Educational (HE) funding strategies tried in the past.
(vi) To identify the problems encountered with each strategy.
(vii) To assess the current HE funding Strategy.
(viii) To ascertain the reasons for the various policies adopted by Jamaica.

QUESTIONS To Be Answered In ACTIVITY 1

1. What were the Higher Education funding policies used by the Government of Jamaica prior to 1990?

2. How were the mechanisms of these policies worked out and implemented?

3. What problems were encountered?

4. Can you identify any benefits of the policies?

5. Describe the current policy of government funding of Higher Education in Jamaica?

6. What is your assessment of this policy?

7. What are the problems experienced with the current policy?

8. How are the problems being dealt with?

9. What are the benefits being derived from the current policy?

10. Since salary is linked to the current funding model, what do you think of the differing salary levels negotiated by government for the HEIs in Jamaica?

11. How has the economic problems being experienced by Jamaica influenced its funding policies?

12. What do you think are the reasons for Jamaica to have adopted the policy it has?

ACTIVITY 3 – Defining the Criteria for the Jamaican Model

Objectives:

viii. To determine some criteria from the Jamaican experience.
ix. To suggest some criteria for the Jamaican Model from the experience of other countries.
x. To ascertain the current and future priorities of the Jamaican Government for Higher Education.
xi. To establish the links between funding strategies, Government priorities and the criteria.
xii. To identify the issues relating to the management of Higher Educational Institutions (HEI) and how funding policies can assist in good management.
xiii. To identify the statutory, legal and other obligations as they relate to the management and funding of HEIs
xiv. To establish the economic issues relating to the financing of Higher Education.

QUESTIONS To Be Answered In ACTIVITY 3

1. What are/should be the expectations of the Jamaican Government in relation to Higher Education?

2. How do you see the Higher Educational Institutions (HEI) fulfilling these expectations?

3. How do you see Government funding influencing these expectations?

4. What factors should Government use in determining a funding policy for HEI in Jamaica?

5. How are the following issues relating to the management and funding of HEIs all over the world pertinent to HEIs in Jamaica?
    - Cost
    - Productivity

- Quality
- Equity
- Efficiency
- Access
- Entrepreneurship
- GATS
- Governance
- Social Responsibility

6. How can a Jamaican Government funding model influence the above issues?

ACTIVITY 2 - REVIEW OF FUNDING METHODOLOGIES AROUND THE WORLD

Objectives

vi. To identify and categorise the different methodologies.
vii. To examine the benefits and challenges associated with each
viii. To ascertain the factors that influence the funding policies
ix. To investigate the possible link between funding strategy and Economic Development
x. To investigate the link between Government priorities and their funding policies.

INTERVIEW QUESTIONS FOR ACTIVITY 2

1. Describe the Higher Education funding policy/model of your country.

2. Describe the mechanics of this policy.

3. Why did your country adopt this model?

4. How has this model/strategy/policy benefited your country?

5. What are the problems being experienced with this policy?

6. What is the current level of economic development of your country?

7. In your opinion, are the effects of the level of economic development on the funding model adopted by your country?

8. What are the stated priorities of your Government for Higher Education?

9. Do you perceive a link between the funding policy and the priorities?

Persons interviewed for activity 2 were:

- Helena Šebková (Director), Marek Melichar (Researcher), and Ondrej Svaton (Head Research Department) - Center on Higher Education Studies (CHES) Czech Republic
- Josef Benes – Director of HE Department, Ministry of Education Czech Republic
- Karel Rais – Pro-Vice Chancellor, Planning Brno University of Technology, Czech Republic.
- Professor Jan Stanek, Vice Rector Institute of Chemical Technology, Prague
- Dr. Mathias Patzold – Secretary General of the Academic Advisory Council of Lower Saxony, Germany
- Dr. Dominic Orr, (Researcher) Higher Education Information System (HIS), Germany
- Dr. Karl-Ernst Fichter – Ministry of Science and Culture, Lower Saxony, Germany
- Jeroen Husiman, Hans Vossensteyn, Carlo Salerno, and Egbert de Weert (Researchers) – Centre on Higher Education Policy Studies (CHEPS), Netherland.
- Ian Lewis and Gerry Taggart – Higher Education Funding Council of England.

APPENDIX XIX: LIST OF DOCUMENTS

NUMBER	CODE	ISSUES	DATES	SOURCE
M1	Feature	CAST Council Meeting	1961-11-06	UTech's Archives
M2	Feature	CAST Council Meeting	1961-12-04	UTech's Archives
M3	RAM	Ministry Paper No. 351/01 re financing the UWI	1963-09-03	25/6 - UWI Archives
M4	Consequence	Bursar to FS re problem to relating to multiple ministries for remittances	1963-11-07	25/6 - UWI Archives
M5	RAM	Billing to the Jamaican Government for the Seismic Research Project for 1963/64	1964-03-13	25/9-51 - UWI Archives
M6	RAM	Jamaica's agreement to reimburse UWI for increase cost for salary increase for 1966-69	1967-05-01	25/6 - UWI Archives
M7	RAM	Billing to the Jamaican Government for UWU	1967-10-20	25/6 - UWI Archives
M8	RAM	Billing to the Jamaican Government for UWU	1969-01-15	25/6 - UWI Archives
M9	RAM	Bursar to FS re Billing - 1969-70	1969-11-06	25/6-191 - UWI Archives
M10	RAM	Report of TAC re Expenditure for 1969-72	1969-11-13	25/6 - UWI Archives
M11	RAM	Expansion and Financing of UWI	1970-01-09	MA 96.2 - UWI Archives
M12	RAM	Bursar to FS re Billing	1970-09-15	25/6 - UWI Archives
M13	RAM	Special Project Planned Expenditure 1972-75	1972-01-31	C.P. 6 - UWI Archives
M14	Consequence	VC Report to Council 1972 re change to the formula for distributing the cost of UWI	1972-04-30	MA 96.2 - UWI Archives
FE1	RAM	Proposal to change the levy system	1971-07-01	C28/22 UWI Archives
FE2	RAM	Financing the Development of UWI - CP 16-32 1972	1971-07-01	CP16-32-1972 UWI Achieves
FE3	RAM	Staff/student Ratio - Question of efficiency cp 16-32 1972	1971-07-01	25/6 UWI Achieves
FE4	RAM	Plans to finance research 1972 - 75 CP 16-32 1972	1971-07-01	CP16-32-1972 UWI Achieves
FE5	RAM	Senate meeting of 8 July 1971 re proposed financial contribution formula	1971-07-01	C28/22 UWI Achieves
FE6	RAM	Decision on the Econ. Cost Allocation Model	1971-07-01	C28/22 UWI Achieves
FE7	Feature	Education to be Free	1973-05-07	Daily Gleaner
FE8	Problem	Former PM reaction to Free Education Policy	1973-05-18	Daily Gleaner
FE9	Feature	Education : Time for massive Effort	1973-06-01	Daily Gleaner
FE10	Feature	Free Education Policy an	1973-06-22	Daily News

NUMBER	CODE	ISSUES	DATES	SOURCE
		Expected Move		
FE11	TLI	Govt. allocation 1974/75 to TE and Boarding grant for FE	1974-05-01	Estimates of Expenditure, 1974, MOF
FE12	Problem	Diff. between MOF & University on application of new RAM 74	1974-10-01	25/6-156 UWI Achieves
FE13	Problem	Expression of capital needs	1975-01-01	25/6 UWI Achieves
FE14	RAM	73/74 billing to Jamaica - April 1975	1975-04-02	25/6 UWI Achieves
FE15	Problem	Exchange between PS MOE and Bursar re delays in remittances	1975-05-15	25/6 UWI Achieves
FE16	RAM	75-78 allocation - Application of the RAM - Mar. 1975	1975-08-01	25/6 UWI Achieves
FE17	RAM	74/75 billing to Jamaica	1976-03-16	25/6 UWI Achieves
FE18	TLI	76/77 allocations to other TLIs	1976-05-01	Estimates of Expenditure, 1976, MOF
FE19	RAM	77/78 billing to Jamaica	1976-10-26	25/6 UWI Achieves
FE20	RAM	1975/76 Economic Cost	1977-03-09	25/6 UWI Achieves
FE21	RAM	76/77 billing to Jamaica	1977-03-10	25/6 UWI Achieves
FE22	RAM	Contribution for Council on Legal Education	1977-05-02	25/6 UWI Achieves
FE23	RAM	Description of the billing and remittance process	1977-07-01	25/6 UWI Achieves
FE24	Problem	Receivables to July 31, 1977	1977-09-23	25/6 UWI Achieves
FE25	RAM	1976/77 Economic Cost	1978-03-02	25/8-III-87 UWI Archives
FE26	TLI	78/79 allocations to other TLIs	1978-05-01	Estimates of Expenditure, 1978, MOF
FE27	Problem	VC to PS MOE re financial crisis due to arrears	1978-06-06	25/6 UWI Achieves
FE28	RAM	Description to economic costing method under 76 change	1978-08-28	25/6 UWI Achieves
FE29	Problem	Bursar's notice of overdraft crisis 78	1978-09-01	25/6 UWI Achieves
FE30	Problem	MOF disagreement with the application of the RAM	1978-10-01	25/6 UWI Achieves
FE31	Problem	FS & VC deliberations over the application of the RAM	1978-10-02	25/6 UWI Achieves
FE32	RAM	1978/79 assessed contribution	1978-11-06	25/6 UWI Achieves
FE33	Problem	Report in National Target news paper in TT re financial problems of the UWI	1979-01-01	National Target No. 43, Saturday January 1979
FE34	RAM	1976/77 Economic Cost	1979-04-05	25/6 UWI Achieves
FE35	Problem	VC to Min. Fin outlining problem and request intervention July 79	1979-07-01	25/6 UWI Achieves
FE36	Problem	VC to Min. Fin re continued	1979-12-01	25/6 UWI

NUMBER	CODE	ISSUES	DATES	SOURCE
		problem with arrears Dec. 79		Achieves
FE37	TLI	80/81 allocations to other TLIs	1980-05-01	Estimates of Expenditure, 1980-81, MOF
FE38	Solution	VC to FS proposing solution to problem - July 1980	1980-07-01	25/6 UWI Achieves
FE39	Problem	Notes of meeting with MOF & University proposed solution - Sept. 1980	1980-09-01	25/6 UWI Achieves
FE40	Solution	MOF acceptance of the UWI proposal Oct. 1980	1980-10-01	25/6 UWI Achieves
FE41	RAM	restructuring - planning unit summary	1981-01-02	25/6 UWI Achieves
FE42	RAM	Restructuring of the University and the RAM Feb - Sept. 1982	1982-02-01	25/6 UWI Achieves
FE43	RAM	Jamaica's position on the devolution	1982-02-03	25/6 UWI Achieves
FE44	RAM	restructuring - MPC meeting	1982-02-13	25/6 UWI Achieves
FE45	RAM	Decision on the 1984 restructuring of the UWI	1982-09-15	25/6 UWI Achieves
FE46	Problem	Delay in approving triennium estimates caused arrears of all governments. Sept 1982	1982-09-17	MPC 22 - 1982, UWI Archives
FE47	RAM	restructuring - sub-committee of Council	1982-09-21	25/6 UWI Achieves
FE48	RAM	81-84 allocation final 72 RAM system	1982-10-01	25/6 UWI Achieves
FE49	TLI	Boarding Grant - 1983-1984	1983-05-01	Estimates of Expenditure, 1983-84, MOF
FE50	Problem	MOF declared inability to meet remittance target - July 1983	1983-05-01	25/6 UWI Achieves
FE51	Problem	Effect of the financial problem on the quality assurance process of UHWI - July 1983	1983-07-01	25/6 UWI Achieves
FE52	Solution	VC understanding of proposed solution July 1983	1983-07-01	25/6 UWI Achieves
FE53	Problem	Bank refused to extend O/D without further LOC from MOF - Aug. 1983	1983-08-04	25/6 UWI Achieves
FE54	Solution	LOC from MOF outline overdraft limits and accepting liability for cost Aug. 1983	1983-08-29	25/6 UWI Achieves
FE55	Problem	MOF analysis of arrears by Jamaica. 1983-84	1983-11-17	25/6 UWI Achieves
FE56	Problem	Effect of Jamaica. Monetary policy on the fin of UWI - Devaluation Jan 1984	1984-01-06	25/6 UWI Achieves
FE57	Problem	Effect of Jamaica. Monetary policy on the fin of UWI - IMP/BOJ restriction on lending LOC invalid Feb. 1984	1984-02-02	25/6 UWI Achieves
FE58	Problem	PM intervention but restriction by F & GP still a Problem - Mar. 1984	1984-03-06	25/6 UWI Achieves

NUMBER	CODE	ISSUES	DATES	SOURCE
FE59	Problem	LRS propose solution inadequate - April 1984	1984-04-12	25/6 UWI Achieves
FE60	Problem	LRS propose solution inadequate - May 1984	1984-05-02	25/6 UWI Achieves
FE61	Solution	BOJ to purchase LRS of University - May 1984	1984-05-03	25/6 UWI Achieves
FE62	Problem	Devaluation, increase Jamaica student numbers increase Jamaica portion of cost - June 1984	1984-06-14	25/6 UWI Achieves
FE63	RAM	restructuring - TOR CGC	1984-08-20	25/6 UWI Achieves
FE64	TLI	Education Tax - How assisting fin of ed.	1985-01-01	25/6 UWI Achieves
FE65	Consequences	Financial problems at UHWI	1985-02-12	25/6 UWI Achieves
FE66	RAM	discussion on computation of per capita grant	1985-07-24	25/6 UWI Achieves
FE67	RAM	Description of 1984 RAM - July 1985 - costing explained	1985-07-30	25/6 UWI Achieves
FE68	Problem	Balance outstanding schedule 31/7/85	1985-08-20	25/6 UWI Achieves
FE69	RAM	Billing 84/85 - July 1985	1985-10-01	25/6 UWI Achieves
FE70	Consequences	Effect of devaluation	1986-01-23	25/6 UWI Achieves
FE71	Problem	arrears 84/85 April 1986	1986-04-04	25/6 UWI Achieves
FE72	RAM	Effect of the new RAM on the Jamaica contribution - May 1987	1987-05-20	25/6 UWI Achieves
C1	Consequences	extension of credit at request of MOF	1986-12-10	25/6 UWI Achieves
C2	Consequences	Increase in overdraft facilities	1987-02-23	25/6 UWI Achieves
C3	Consequences	Guarantee for overdraft	1987-03-23	25/6 UWI Achieves
C4	Consequences	Appeal to PM	1987-05-03	25/6 UWI Achieves
C5	Consequences	Cash flow problems	1987-05-04	25/6 UWI Achieves
C6	Consequences	Discussion with PM Jamaica	1987-05-26	25/6 UWI Achieves
C7	Consequences	Authority to fund by bank credit	1987-06-05	25/6 UWI Achieves
C8	RAM	assessment 1986/87 under devolved system	1987-07-31	25/6 UWI Achieves
C9	RAM	Cost Structure of UWI consultant report	1987-08-28	25/6 UWI Achieves
C10	Consequences	Financial problems at UHWI	1987-09-17	25/6 UWI Achieves
C11	RAM	Comments on the consultants cost structure report	1987-09-30	25/6 UWI Achieves
C12	Consequences	Interest on overdraft to July 1987	1987-12-15	25/6 UWI Achieves
C13	Consequences	Outstanding contributions from	1987-12-16	25/6 UWI

NUMBER	CODE	ISSUES	DATES	SOURCE
		Jamaica		Achieves
C14	Consequences	Outstanding contributions from Jamaica	1988-03-31	25/6 UWI Achieves
C15	Consequences	Access and tuition fees	1988-04-08	MA 96.2 UWI Archives
C16	Consequences	Interest charged on account to March 1988	1988-04-13	25/6 UWI Achieves
C17	Consequences	VC Report on the overall financial situation	1988-05-12	25/6 UWI Achieves
C18	Consequences	Outstanding contributions from Jamaica	1988-05-20	25/6 UWI Achieves
C19	Consequences	Report of visit of the PM Jamaica at F & GP	1988-05-30	25/6 UWI Achieves
C20	Consequences	Outstanding contributions from Jamaica	1988-06-01	25/6 UWI Achieves
C21	Consequences	Interest charged on account to May 1988	1988-06-13	25/6 UWI Achieves
C22	Consequences	Notes of Meeting with PM Jamaica	1988-06-15	25/6 UWI Achieves
C23	Consequences	MOF proposal to deal with outstanding contribution	1988-06-29	25/6 UWI Achieves
C24	RAM	Explanation of increase for estimate 1987-90	1988-07-11	25/6 UWI Achieves
C25	RAM	Remittances by Jamaica 1987-1990	1988-08-12	25/6 UWI Achieves
C26	RAM	Contributions & Assessment 1987/1989	1988-08-17	25/6 UWI Achieves
C27	Consequences	Arrears reported at F & GP	1988-12-14	25/6 UWI Achieves
C28	Consequences	problems with collecting from Gov. to pay bank	1989-01-13	25/6 UWI Achieves
C29	Consequences	Arrears statement to F & GP	1989-03-15	25/6 UWI Achieves
C30	Consequences	VC Report on the overall financial situation	1989-03-17	25/6 UWI Achieves
C31	Consequences	Arrears by Jamaica	1989-03-21	25/6 UWI Achieves
C32	Consequences	Promissory note from MOF	1989-04-01	25/6 UWI Achieves
C33	Consequences	MOF acknowledgement of arrears	1989-05-15	25/6 UWI Achieves
C34	Consequences	Bursars summary of the MOF response	1989-05-25	25/6 UWI Achieves
C35	Consequences	VC personal concerns on MOF response	1989-05-31	25/6 UWI Achieves
C36	Consequences	Minister's details about dealing with arrear	1989-06-19	25/6 UWI Achieves
C37	Consequences	Problem cases in remittances	1989-07-17	25/6 UWI Achieves
C38	RAM	assessment 1988/89 under devolved system	1989-07-31	25/6 UWI Achieves
C39	RAM	statement of contributions 1988/89	1989-07-31	25/6 UWI Achieves
C40	Consequences	notes of meeting UWI/MOF	1989-08-04	25/6 UWI Achieves

NUMBER	CODE	ISSUES	DATES	SOURCE
C41	Consequences	effect of credit restrictions on overdraft	1989-09-15	25/6 UWI Achieves
C42	Consequences	Overdraft conversion proposal	1989-10-02	25/6 UWI Achieves
C43	Consequences	Problem with collecting capital grants	1989-10-10	25/6 UWI Achieves
C44	Consequences	Overdraft converted to loan but subject-IMF guidelines	1989-12-27	25/6 UWI Achieves
C45	Consequences	Overdraft interest rate	1989-12-27	25/6 UWI Achieves
C46	Consequences	Overdraft - UWI concern about interest rates	1990-01-04	25/6 UWI Achieves
C48	Consequences	VC Report on the overall financial situation	1990-04-06	25/6 UWI Achieves
C47	RAM	Separation of Central and Campus Administration	1990-04-06	MA 96.2 UWI Archives
C49	RAM	assessment 1989/90 under devolved system	1990-07-31	25/6 UWI Achieves
C50	RAM	Billing for 1989/90	1990-11-13	25/6 UWI Achieves
C51	Consequences	Salary parity issue with the other territories	1991-02-20	25/6 UWI Achieves
C52	Consequences	arrears as at July 31, 1990 Jamaica paid off arrears	1991-04-11	25/6 UWI Achieves
C53	Consequence	Report of the Committee on Tuition Fees	1991-06-08	MA 96.2 UWI Archives
C55	RAM	assessment 1990/91 under devolved system	1991-07-31	25/6 UWI Achieves
C54	RAM	UHWI contributions paid through MOE	1991-07-31	25/6 UWI Achieves
C56	Consequences	Overdraft $75,029,438.37	1991-08-27	25/6 UWI Achieves
C57	Consequence	University Bursar to Principal Mona overdraft	1992-01-14	25/6 UWI Achieves
C58	Consequence	Principal to Min of Education re additional funding	1992-01-17	25/6 UWI Achieves
C59	Consequence	Additional Funding	1992-02-11	25/6 UWI Achieves
C60	Consequence	MOF to NCB on overdraft	1992-02-24	25/6 UWI Achieves
C61	Consequences	VC Report on the overall financial situation	1992-04-01	25/6 UWI Achieves
C62	Consequence	VC to Min of Fin on arrears	1992-04-21	25/6 UWI Achieves
C63	Consequence	VC to PS re loans for development	1992-04-22	25/6 UWI Achieves
C64	Consequence	Min of Fin to VC on arrears	1992-04-28	25/6 UWI Achieves
C65	Consequence	University Bursar to VC on arrears	1992-06-26	25/6 UWI Achieves
C66	RAM	assessment 1991/92 under devolved system	1992-07-31	25/6 UWI Achieves
C67	Consequence	UWI Council Meeting on Tuition Fees	1992-09-08	MA 02.20 UWI Archives

NUMBER	CODE	ISSUES	DATES	SOURCE
C68	Consequence	Min of Fin to Principal re arrears	1992-10-16	25/6 UWI Achieves
C69	Consequence	MOF to Bursar Promissory Note	1993-01-25	25/6 UWI Achieves
C70	Consequence	Deputy Bursar to Principal - Arrears	1993-03-12	25/6 UWI Achieves
C71	Consequences	VC Report on the overall financial situation	1993-03-31	CP 1 VC Report UWI Archives
C72	Consequence	Minutes of UGC 1993	1993-04-01	25/6 UWI Achieves
C73	RAM	Allocation of Cost	1993-06-22	25/6 UWI Achieves
C74	Consequence	Campus Bursar to University Bursar on devaluation	1993-07-09	25/6 UWI Achieves
C75	Consequence	PS to Bursar	1993-07-28	25/6 UWI Achieves
CS1	Consequence	Financial Report	1993-09-26	FGP (M) P.1 1993/94 UWI Archives
CS2	Consequence	NCB to Bursar on overdraft	1993-11-10	25/6 UWI Achieves
CS3	Consequence	Notes of meeting with Min of Fin	1993-12-14	25/6 UWI Achieves
CS4	Consequence	NCB to VC on overdraft	1993-12-14	25/6 UWI Achieves
CS5	Consequence	Min of Fin to Campus Principal on Fin situation	1993-12-16	25/6 UWI Achieves
CS6	RAM	GOJ contribution	1993-12-28	25/6 UWI Achieves
CS7	Features	Policies and Procedures for administering The Cost Sharing Scheme for Financing Education	1994-06-01	School of Education, Document Centre
CS8	RAM	Report on Chancellor's Commission on Governance	1994-07-01	UWI Archives
CS9	RAM	Campus Bursar to Uni. Bursar re GOJ Proposal to fund UWI 94/95	1994-09-29	25/6 UWI Achieves
CS10	Features	VC to FS-GOJ proposal to fund UWI 1994/95	1994-09-30	25/6 UWI Achieves
CS11	Features	A cost recovery programme for Tertiary Education	1994-10-01	MOEYC
CS12	Features	Cabinet Decision on UWI No. 41/94	1994-10-31	25/6 UWI Achieves
CS13	Features	Min of Fin to VC - GOJ proposal to fund UWI 94/95	1995-01-16	25/6 UWI Achieves
CS14	Consequence	Campus Bursar to Uni. Bursar re overdraft	1995-01-23	25/6 UWI Achieves
CS15	Consequence	Bursar to NCB re overdraft	1995-02-07	25/6 UWI Achieves
CS16	Features	VC to Min of Fin on GOJ proposal to fund UWI	1995-04-07	25/6 UWI Achieves
CS17	Consequence	CAST to become National Polytechnic University	1995-05-11	25/6 UWI Achieves

NUMBER	CODE	ISSUES	DATES	SOURCE
CS18	Consequence	Financial Report	1995-06-26	Daily Gleaner & Daily Observer
CS19	RAM	Hospital Administrator to MOE re GOJ Proposal to Fund UHWI	1995-06-28	FGP (M) P.119 1994/95 UWI Archives
CS20	Consequence	Institutional Assessment Report on CAST	1995-07-12	25/6 UWI Achieves
CS21	Features	Commission on Gov. - Implementation Committee	1995-11-24	UTECH Files
CS22	RAM	Commission on Gov. - Finance & Planning	1995-11-24	MA 02.20 UWI Achieves
CS23	RAM	Working Groups Report on Chancellor's Commission on Governance	1995-11-24	MA 02.20 UWI Achieves
CS24	Features	Bursar to UGC of GOJ proposal to fund UWI	1995-12-29	MA 02.20 UWI Achieves
CS25	Consequence	Financial Report	1996-01-22	25/6 UWI Achieves
CS26	Consequence	Overdraft	1996-01-31	25/6 UWI Achieves
CS27	Consequence	Financial Report	1996-02-26	25/6 UWI Achieves
CS28	Consequence	Financial Report to Council with proposed tuition fees 95/96	1996-04-19	UWI Annual Report, UWI Achieves
CS29	Consequence	VC Report on Financial Situation	1996-04-19	UWI Annual Report, UWI Achieves
CS30	Consequence	Campus Bursar to MOF	1996-04-29	25/6 UWI Achieves
CS31	Consequence	Beso Report on UTECH	1996-06-07	UTECH Files
CS32	Features	Min of Ed to World Bank on GOJ Cost Sharing Policy - World Bank SLB Report 15594-JM	1996-06-10	World Bank Report 1996
CS33	Consequence	Principal to Min of Education shortfall on Budget	1996-06-19	25/6 UWI Achieves
CS34	RAM	Outcomes of Chancellor's Commission on Governance	1996-07-01	25/6 UWI Achieves
CS35	Consequence	Financial Report	1996-07-23	25/6 UWI Achieves
CS36	Consequence	Financial Report	1996-11-22	25/6 UWI Achieves
CS37	Consequence	Financial Report	1997-01-21	FGP (M) P.36 1996/97
CS38	Consequence	Financial Report	1997-02-19	FGP (M) P.42 1996/98
CS39	Consequence	Variance notes 94/95 & 95/96	1997-04-17	25/6 UWI Achieves
CS40	Consequence	VC to Min of Fin re arrears	1998-02-12	25/6 UWI Achieves
CS41	Features	Tuition Fees 98/99	1998-04-24	UWI Annual Report, UWI Achieves
CS42	RAM	Streamlining the allocation of Recurrent Contributions	1998-04-28	25/6 UWI Achieves
CS43	RAM	Recurrent contribution for period	1998-05-04	25/6 UWI

NUMBER	CODE	ISSUES	DATES	SOURCE
		ending July 1998		Achieves
CS44	Consequence	VC to Min of Fin on funding the UWI 98/99	1998-11-11	25/6 UWI Achieves
CS45	RAM	Fin. Service Manager to Bursar re allocation of receipts	1998-12-08	25/6 UWI Achieves
CS46	Consequence	Extracts from Minutes of Council meeting	1999-04-01	UWI Annual Report, UWI Achieves
CS47	Consequence	Extracts from Minutes of Council meeting	2000-04-01	UWI Annual Report, UWI Achieves
CS48	Features	Profile of Mona Campus 1994/2000	2001-03-31	UWI Annual Report, UWI Achieves
CS49	Consequence	Extracts from Minutes of Council meeting	2001-04-01	UWI Annual Report, UWI Achieves
CS50	RAM	Tuition Fees 01/02	2001-04-01	UWI Annual Report, UWI Achieves
CS51	RAM	Campus Bursar to Campus Registrar re data on sponsored students	2001-10-01	25/6 UWI Achieves
CS52	RAM	Protocol for UTECH/Central Government Interaction	2003-03-13	UTECH Files
CS53	RAM	Enrolment in Community Colleges By Sex 2001/2002	2003-03-31	MOEYC
CS54	RAM	Enrolment in Teacher Training Programmes 2001/2002	2003-03-31	MOEYC
CS55	RAM	Shortwood Teachers College Statistics 1995 - 2003	2003-03-31	MOEYC
CS56	RAM	Enrolment in Community Colleges By Sex 2000/2001	2003-03-31	MOEYC
CS57	RAM	Enrolment in Teacher Training Programmes 2000/2001	2003-03-31	MOEYC
CS58	RAM	Profile of Mona Campus 2000/2003	2004-04-01	UWI Files

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